OmniTerm XPe

Windows XPembedded Thin Client

User's Guide

Version 1.1.0

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Chapter 1 - Introduction

An overview of the XPe Thin Client is presented along with a description of its file system.

1.1 - Overview

The XPe thin client, with its high quality, versatility, and flexibility, is an expandable high-performance terminal that gives users the ability to access Windows, Internet, multimedia, and legacy applications, at a lower total cost of ownership than PCs or other computing products.

The XPe client software, powered by Microsoft Windows XP Embedded, has built-in support of Microsoft RDP and Citrix ICA protocol, multiple terminal emulations (such as IBM 5250, 3270 and 3151, DEC VT-420, Wyse WY-60, among others), Internet Explorer, and Windows Media Player. Users can access applications running on Microsoft Windows Server 2003 and Citrix MetaFrame, as well as mainframe, midrange, UNIX and other legacy applications, multimedia and the Web. This provides broad application compatibility and system integration, improving user productivity. And since it uses Microsoft Windows XP Embedded, the client software supports the full Win32 API, as well as Windows XP Professional device drivers and development tools, and many third-party device drivers. This facilitates rapid creation, integration and porting of local applications into the Xpe terminal.

PCMCIA expansion slot, higher-performance CPU, serial and parallel printer ports, 10/100 BaseT Fast Ethernet, USB and PS/2 ports, audio and an internal power supply are all standard hardware contained in a small footprint metal enclosure. This simplifies network and peripheral connection and unit deployment, reducing installation time to just minutes. The OmniTerm hardware platform adds PCMCIA support for a wide variety of devices including 802.11 wireless Ethernet.

Like all NLynx thin clients, XPe works seamlessly with the SNMP Administrator software. This powerful tool gives administrators complete centralized control of all NLynx desktops, dramatically reducing support costs.

1.2 - The XPe File System

The XPe memory system is composed of 256MB of Flash memory (persistent storage) expandable to 1GB plus 256MB DRAM (temporary storage) expandable to 1GB. These storage areas are ‘virtual’ disk drives C: and Z: respectively.

Flash disk (C:)
The XPe thin client contains a Flash memory-based file system where the operating system and local application files are stored. The Flash drive is protected at all times, except when the local **Administrator** is logged on.
Note: It is recommended that you save files on a server and not on the flash storage. A minimum of 10MB of unused space should be maintained on C: for proper operation.

Temporary RAM disk (Z:)
The XPe thin client uses a virtual disk which utilizes a portion of the system memory. This virtual drive is labeled Z: and is used to store temporary data. This storage is volatile and will be erased when the thin client is shut down or rebooted. Therefore, any files that you want to keep and use again should not be stored on drive Z:. Drive Z: is a good location for storing session-specific files that should not be permanently stored in the Flash disk. These types of files include: software temp files, temporary Internet cache, spooled print jobs, etc. This drive may be used to temporarily store installation or other files.

Mapping network drives
To map network drives, it is necessary to be logged in as the Administrator or an account with administrator privileges. Drive mappings will persist as so defined.

Chapter 2 - Startup and Configuration

This chapter describes how to initially log on to your thin client and how to do basic configuration.

If the 'wired' LAN Ethernet connection is plugged into your LAN, a LAN connection using DHCP will be started automatically.

2.1 - Default Logon Accounts

The XPe thin client comes with two default logon accounts: **Administrator** and **User**.

Logging on as **Administrator** allows you to configure every aspect of the XPe.
Logging on as **User** allows you to use the pre-installed software but not to make configuration changes.

The **User** account is also configured with constraints designed to improve overall security. These User account limitations lock down the operating system to prevent unauthorized changes that could impair function and reduce the exposure to viruses and other unintentional software installations. For instance, if not logged on as **Administrator**, the following functions of the Windows Security screen invoked by Ctrl+Alt+Del will not be available: Task Manager, Change Password, and Lock Computer.

2.2 - Logging On

After powering up the terminal for the first time, you can logon using one of the two default logons:

Default Accounts	User Name	Password*
Administrator	Administrator	Administrator
User	User	User

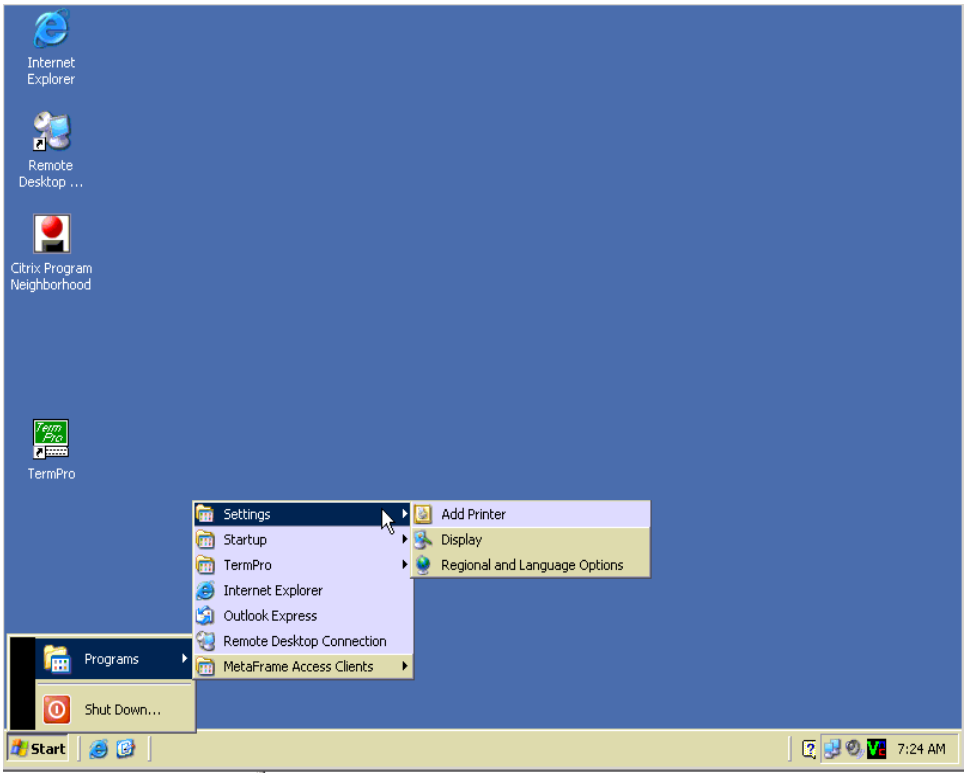
* Passwords are case-sensitive

The user **Administrator** is automatically logged into the terminal by default. As **Administrator** you can configure the system to your liking (see XPe Management below).

For security reasons, consideration should be given to changing the default passwords. It is recommended that all units in the same group be assigned the same **Administrator** password for simplified administrative control.

When you log in as **Administrator**, the flash drive is unprotected and changes to the device configuration are allowed. Writes are allowed to the flash drive at all times until the terminal has been restarted. For example, if you login as **Administrator**, log out, then back in as **User**, the flash is unprotected and writes are allowed. YOU MUST REBOOT to ensure the flash write protection is enabled. When any user other than *Administrator* logs in after a reboot, the flash is protected and no changes or writes will be saved.

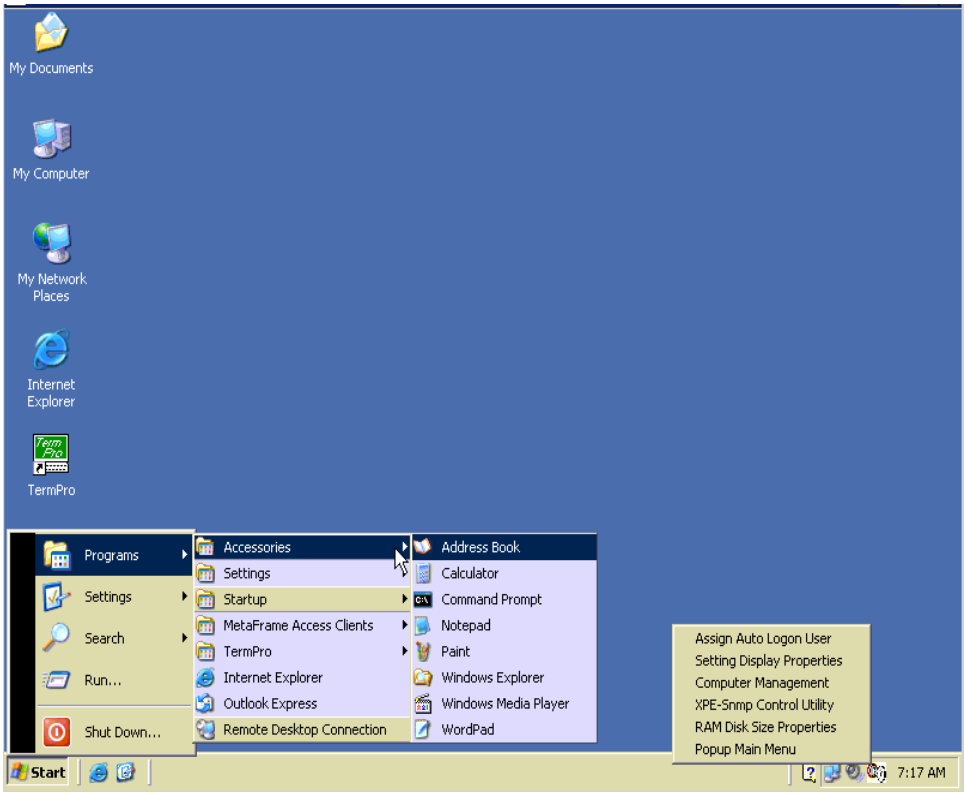
The initial User logon screen is shown below.



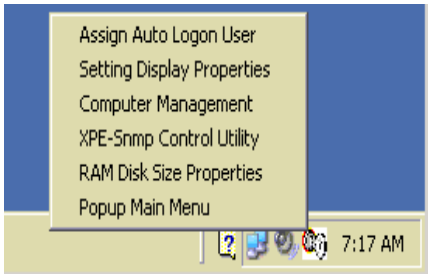
*Note: the **V** icon only shows when the terminal is shadowed (by SNMPadm) then stays on the SYSTRAY until the terminal is rebooted.*

2.3 - XPe Management

The initial desktop screen after **Administrator** logon is as follows.

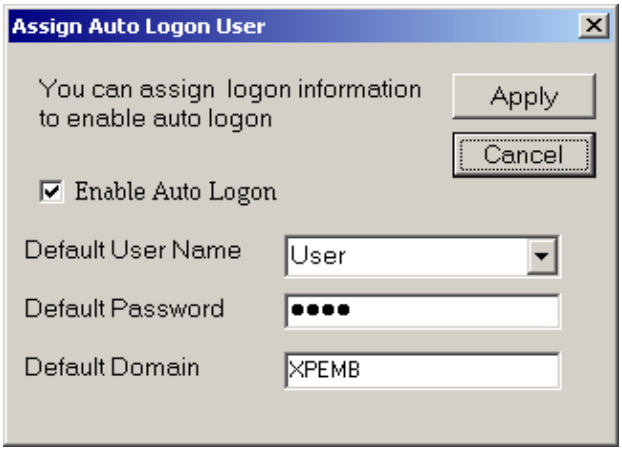


On the right side of the task bar (before time-of-day) is a ‘Key-in-Lock’ icon for the XPe management functions. Right click this icon to display the available management options shown in the display above. The management options are described on the following pages. Click the desired management function.



2.3.1 - Assign AutoLogon User

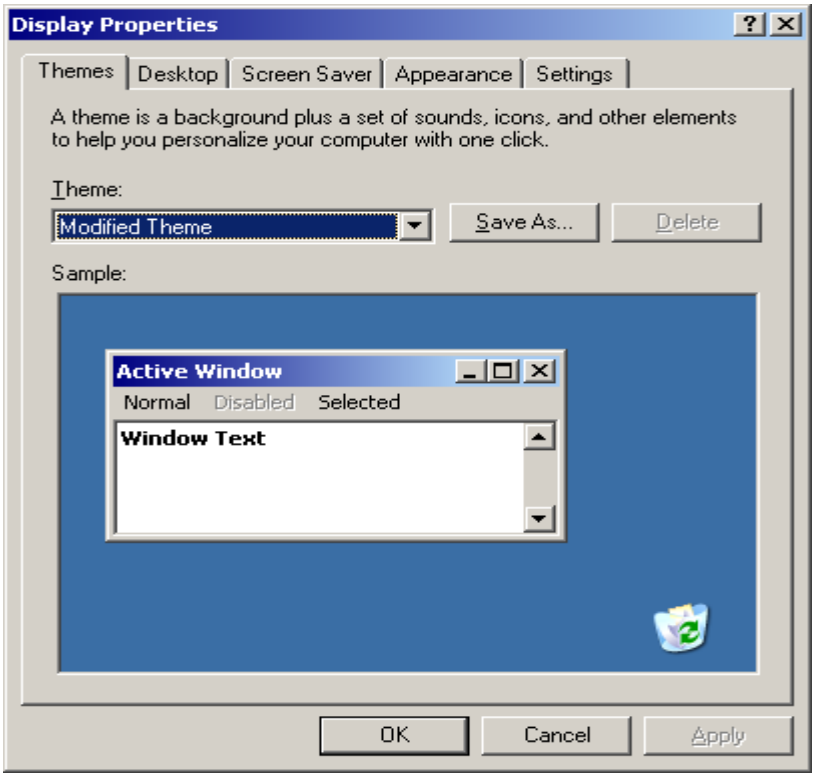
Use this screen to setup AutoLogon



Note: A user that has just been added will not display on the Default user name list. -type that name and password into the fields, then click Apply.

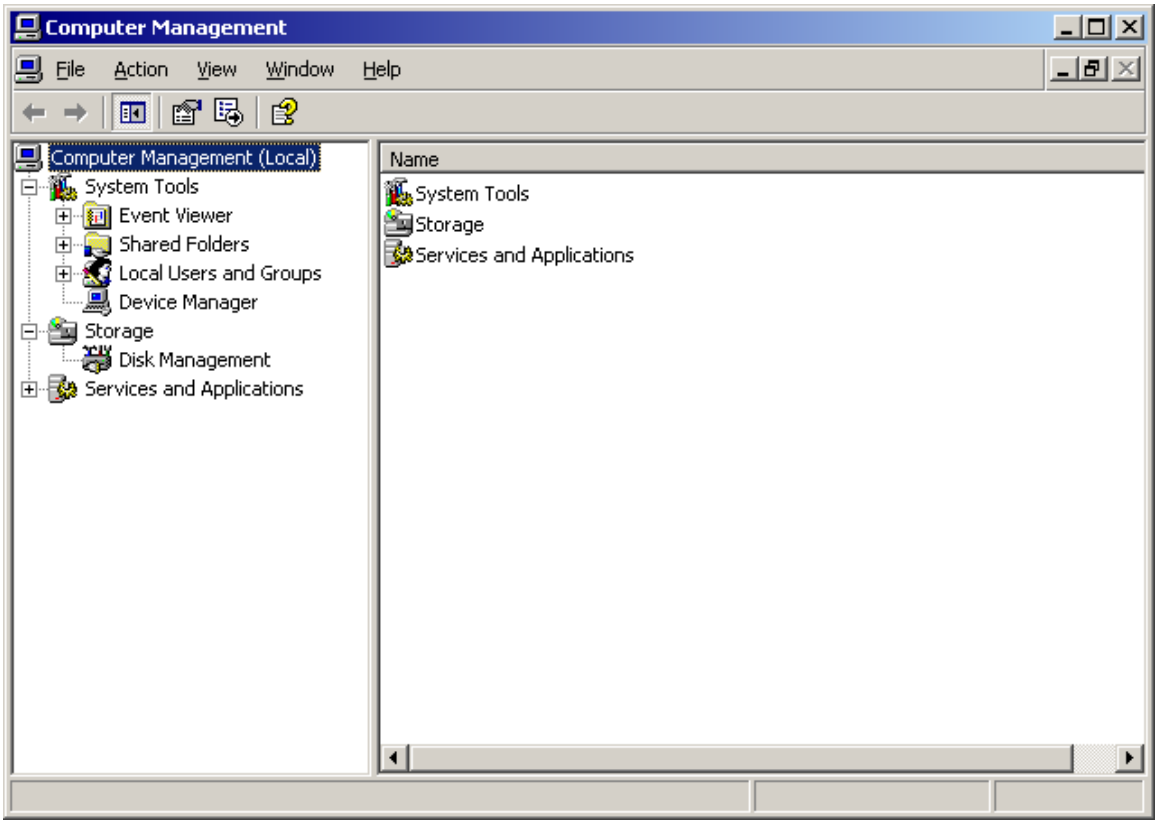
2.3.2 - Setting Display Properties

Use the standard XP Display Properties shown below to set desired display settings.



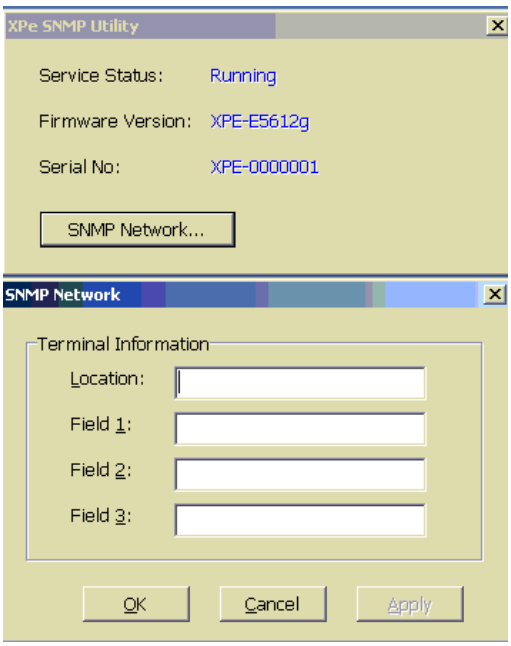
2.3.3 - Computer Management

Standard XP computer management. Refer to Microsoft XP Professional Documentation on the Microsoft Web site for details on how to use these screens.



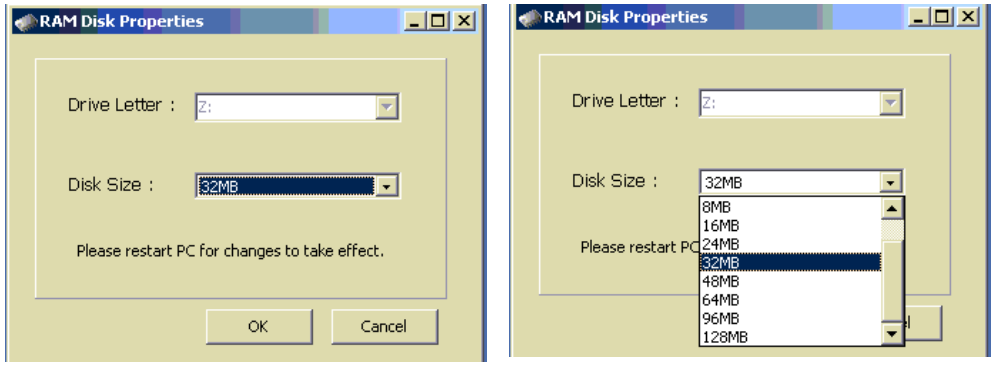
2.3.4 - XPe SNMP Control Utility

This screen displays the Firmware Version and unit Serial Number.
Use the SNMP Network button to allow entry of user defined Terminal Information codes which are displayed for the terminal by the SNMPadm program.



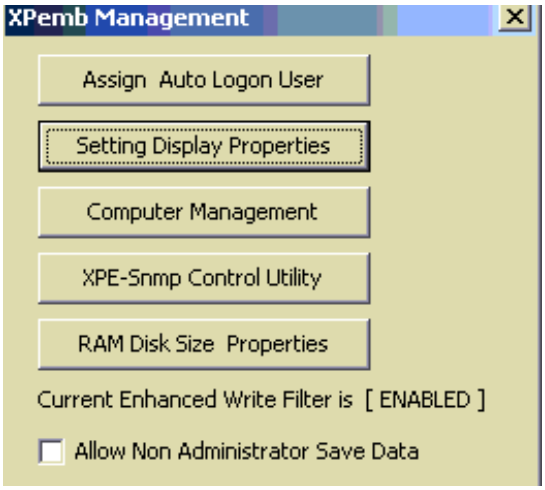
2.3.5 - RAM Disk Size Properties

If a program requires more RAM to run properly, you can selected a larger size from the pull down list.



Note: Some installation programs may require 64MB of working space. Changing the RAM Disk size allocates RAM to be used as a virtual disk file. You must restart after making this change. It is recommended to allocate the minimum RAM Disk size for your application.

2.3.6 - PopUp Main Menu



The first five options are as described previously.

The ‘Current Enhanced Write Filter’ if enabled, allows you to write to protected ‘Flash’ memory. If this capability is to be granted to users, other then the Administrator, check the ‘Allow … Save Data’ box. For maximum device protection, it is recommended that only the Administrator be allowed to save data (leave this Check Box unselected).

2.4 - Network Connections

Network and Domain configuration is performed in the same manner as Windows XP Professional.

By default the wired LAN Ethernet connection using DHCP is enabled. Wireless and Remote Access Dial Up connections may be configured.

2.5 - Microsoft Firewall

The XPe Firewall is by default disabled. See the Microsoft web page for procedures to enable and configure this firewall.

Chapter 3 - Applications

This chapter describes the software applications that are preinstalled and configured on your XPe thin client. It also describes how to install new applications.

3.1 - Installing new Applications

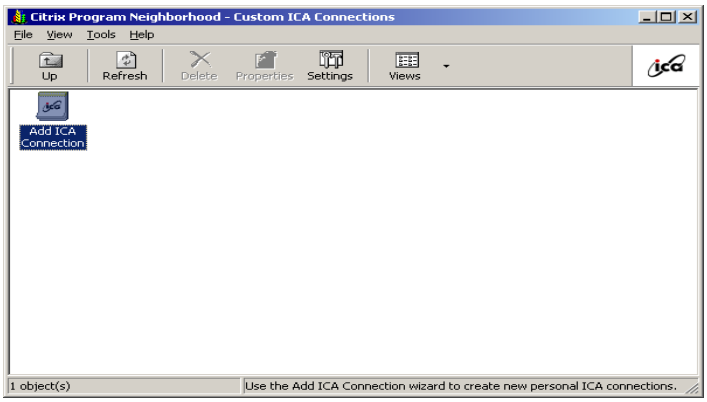
Applications and Device Drivers can be loaded only by the Administrator. They can be installed by way of a network resource or USB mass storage device. The Z: RAM drive may be used to temporarily store install or other files.

XPe does not support the 'Add/Remove Programs' wizard. New programs/drivers must provide their own Install/Uninstall programs (e.g. setup.exe, install.exe).

> ***It is recommended that before changes are made to the default configuration, a backup copy of the default image be made. Using SNMPADM management software, discover the XPe Terminal, then drag/drop the IP address into the "Remote Images" window. This task needs to be done one time. One backup image can be used for all terminals. The image must be saved in the default "Data" folder.***

3.2 - Citrix Program Neighborhood (*click named Icon*)

Citrix Program Neighborhood is a utility that allows administrators and users to create server connections using the Citrix ICA Client. Citrix Independent Computing Architecture (ICA®) is a network protocol that allows the remote display of, and interaction with applications running on Microsoft Windows Server 2003, Microsoft Windows 2000 Server (as well as Advanced Server and Datacenter Server versions), Microsoft Windows NT 4 Server, Terminal Server
Edition (TSE), and to servers that are running Citrix MetaFrame®, or WinFrame®. Newer versions of the ICA client can be installed by the Administrator if required.



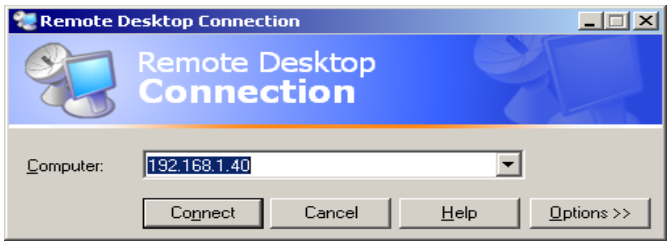
3.3 - Microsoft Remote Desktop Connection (*click RDP Client icon*)

Microsoft's Remote Desktop Connection software is a utility that allows administrators and users to create server connections using Microsoft RDP (Terminal Services).

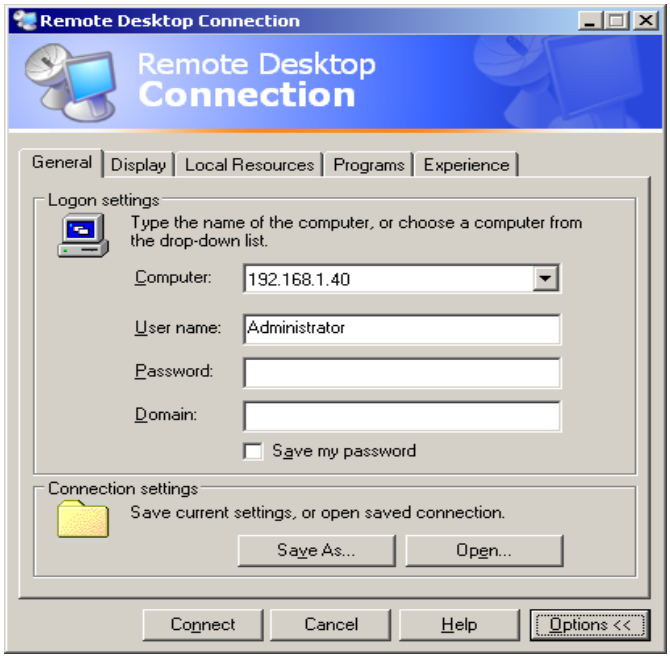
Microsoft's Remote Desktop Protocol (RDP) is a network protocol that allows the remote display of, and interaction with applications running on Microsoft Server 2003/2000, and Microsoft Windows NT Server, Terminal Server Edition (TSE).

When used with computers running Windows Server 2003 or Windows XP Professional, the Remote Desktop Connection / RDP is capable of:

- High color display on the thin client
- Locally playing audio generated on the server
- Accessing devices connected to the serial port
- Accessing printers connected to the thin client
- Accessing USB external floppy/CD-ROM/Zip drives

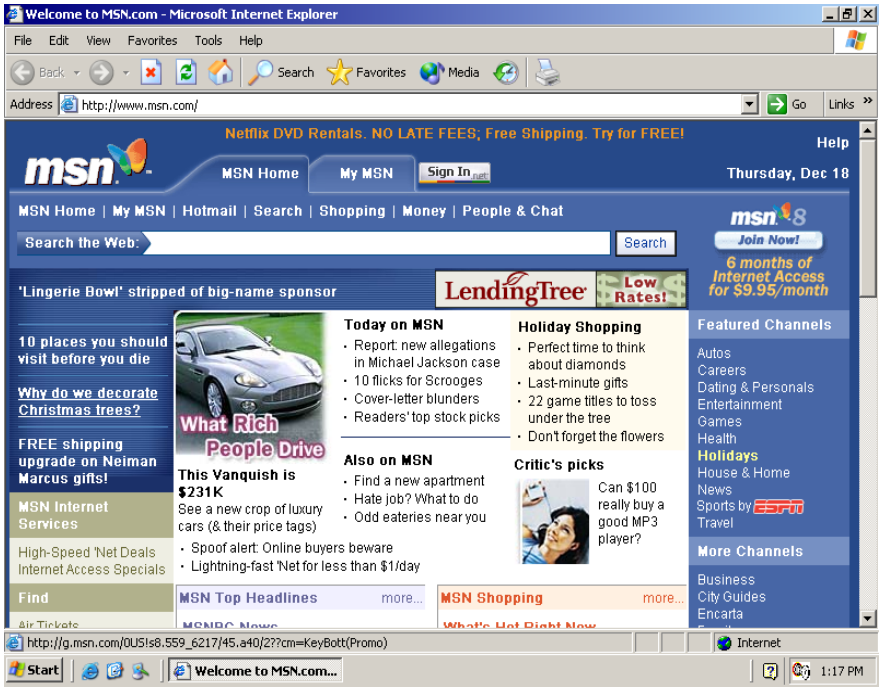


Click Options for advanced settings.



3.4 - Microsoft Internet Explorer (click IE icon)

Microsoft Windows XPe includes Internet Explorer Web browser, version 6.0. **Administrator** has full, unrestricted access to IE 6.0 menus and functionality. **User** has restricted access to IE 6.0, no access to the File menu functions, and limited access to configurations.



The following functions are provided:

3.4.1 - Microsoft Java Virtual Machine

Microsoft Java Virtual Machine is installed as a plug-in for Internet Explorer 6.0. It provides the ability to execute Java applets on HTML pages.

3.4.2 - Adobe® Acrobat® Reader Plug-In

Adobe® Acrobat® Reader™ software lets you view and print Adobe Portable Document Format (PDF) files, and fill in and submit Adobe PDF forms online.

3.4.3 - Macromedia Flash™ Plug-In

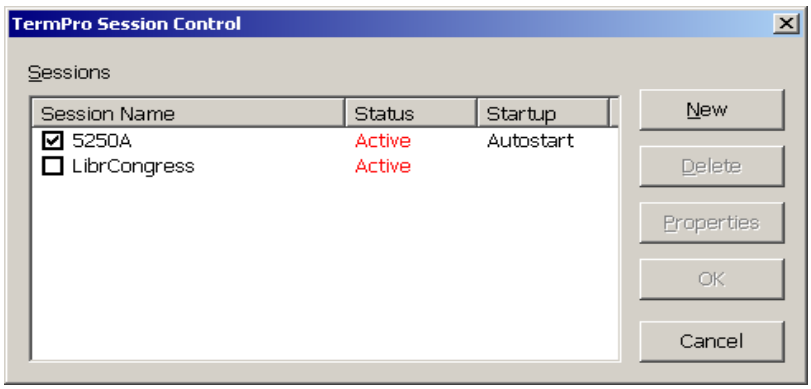
The Macromedia Flash Plug-In allows users to seamlessly view and interact with vector-based animated content created with Macromedia Flash software.

3.4.4 - Microsoft Windows Media Player

The XPe thin client includes the Microsoft Windows Media Player. The Media Player is installed as both a freestanding application and also as a plug-in for Internet Explorer 6.0. Media Player allows you to play audio and video files and data streams from Web sites.

3.5 - TermPro Emulations (click TermPro icon)

TermPro provides terminal emulation support for TN5250 (AS/400-iSeries), TN3270 (Main Frames) and ASCII (Unix/Linux systems). See Chapter 4 for details on configuring and using terminal emulation sessions.



3.6 - 802.11a/b/g Wireless Adapter Support

Virtually all 802.11a/b/g PCMCIA cards and USB Adapters have drivers for Windows XP and therefore are compatible with XPe. The driver and application software must be loaded on the thin client.

3.7 - USB device support

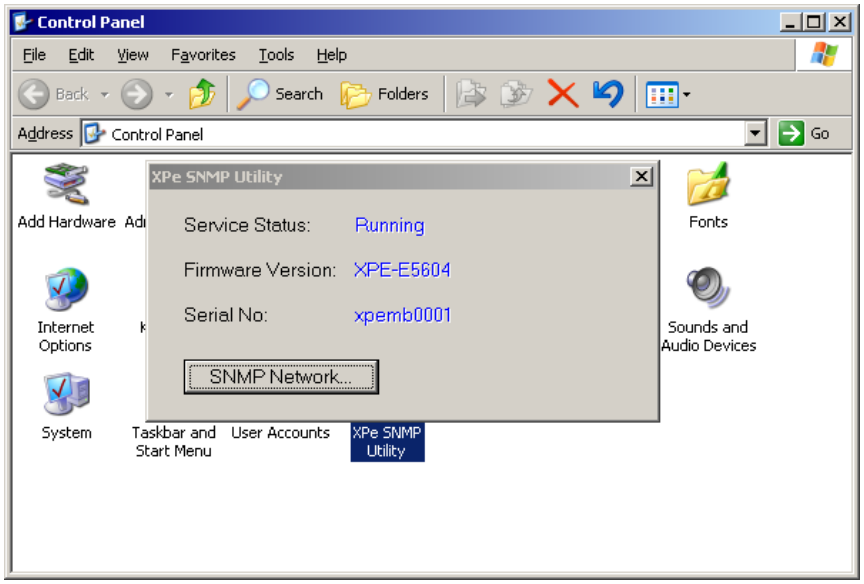
Microsoft Windows XP Embedded includes USB support for a number of common external devices such as keyboards, mice, and printers, as well as external drives (Zip, CD-ROM, Floppy). Most USB keyboards, mice, ZIP drives and many CDR and hard drives are supported. After hardware installation, you may be prompted for a device driver. If this occurs, install the driver.

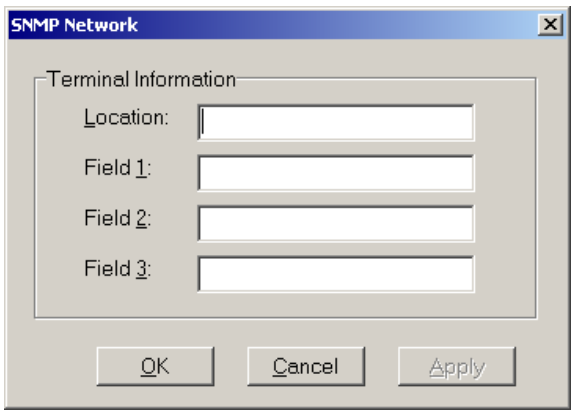
3.8 - SNMPadm - Remote management

The NLynx SNMP administrator remote management software is a PC-based application that provides sophisticated centralized administration capabilities for the full line of NLynx thin clients. With SNMP administrator, you can:

- Locate and view the specifications of NLynx Windows base thin clients on your network.
- Select, group, and export lists of your Windows thin clients for easy management.
- Centrally update or clone the Windows XPe system software of your thin clients.
- Shadow and control remote terminals.
- Patch the XPe image or installed software.

A XPe SNMP Utility is available to the **Administrator** in the Control Panel which shows the XPe firmware version and Serial Number. Custom (arbitrary) terminal information text can be specified for display to SNMPadm by use of the 'Terminal Information' screen.





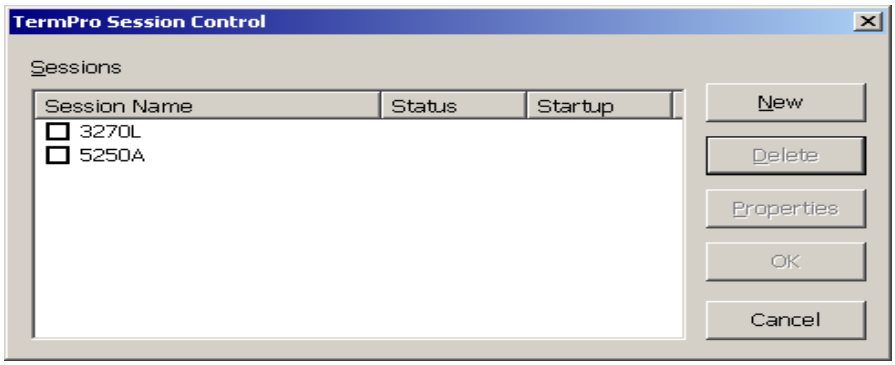
Chapter 4 - TermPro (Terminal Emulations)

TermPro allows you to Configure, Edit, and Start TN5250 (AS/400), TN3270 (Mainframe), or ASCII (Unix/Linux systems) emulation sessions with one or more Hosts.

Sessions are named and can be set to autostart when TermPro is started (double-click TermPro icon on the desktop).

If there are no sessions to autostart, the Session Control screen shown below is displayed, If one or more sessions are set to autostart, those sessions are started. Entries are made on the Task Bar for all active sessions. The first named (alphabetical) session is displayed. The key sequence **Alt+PgUp** can be used to jump between sessions. To go to the Session Control screen, from an active session from the menu bar click **File-New Session**.

TermPro Session Control



(2 sessions are shown for example only)

The Session Name column shows the names of created sessions in alphabetical order. The Status column displays the word ***Active*** if the session is running (active). The Startup column displays the word ***Autostart*** if the check box before the Session Name is checked - these sessions will be automatically started when TermPro is activated.

To create a new session click **New.** To edit or examine an existing (non-active) session, click that sessions name and then click **Properties**. See following section which describes the configuration screens.

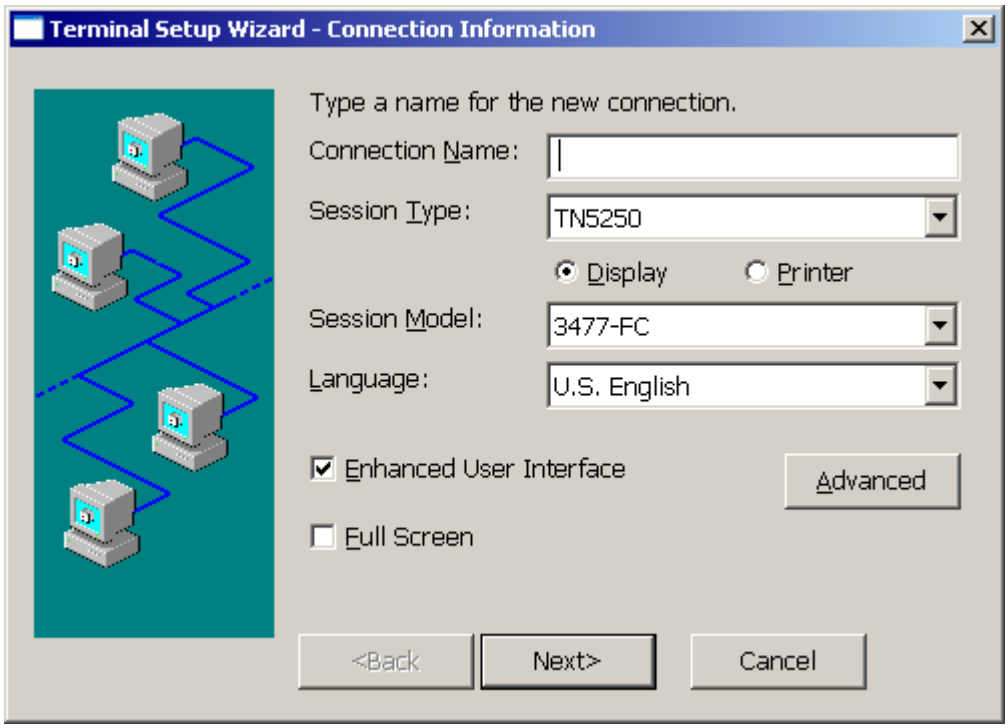
To delete a non-active session, click that sessions name and then **Delete**.

To start a session, click its name and then click **OK**. That session will be started and displayed (name on Task Bar). To change the Autostart mode, check the desired box by the Session Name then click OK.

4.1 - Configure/Edit Session

The following screens are used to define an emulation session.

Connection Information



Connection Name:
Enter a Connection Name to identify the session. This name must be unique. It displays in the Session Name column in the TermPro Session Control Box. Limit length to 15 characters or less.

Session Type:
Select one of the Session Types (TN5250, TN3270, ASCII).

Display or Printer:
Click to select either a Display or Printer session.

Session Model:
This item varies with Session Type and Display/Printer selected.
See the following Table.

Session Type	***Display Models***	***Printer Models***
TN5250	3477-FC 3477-FG 3180-2 3197-2 3196-A2 5292-2 5291-1 5251-11	3812-1
TN3270	3278-2-E 3278-3-E 3278-4-E 3278-5-E	3287-1
ASCII	VT100 VT220 VT320 VT420 7-Bit VT420 8-Bit ANSI-BBS SCO-ANSI IBM3135-31 WYSE-50/60	<NONE>

Language:
Select the desired language. US English is the default.

Full Screen (Display only):
Check this box to cause the emulation screen to be displayed in ***Full Screen*** mode. In this mode, the screen appears as a 'green screen' dumb terminal with input only from the keyboard (no mouse cursor). A windows Title Bar and Status Line are not shown.

Enhanced User Interface (TN5250 Display only):
The default state is checked which indicates normal support for such user interface features as scroll bars, select fields, field progression, enter field attributes word wrap, etc. On older emulations such as 3196, the enhanced interface is not supported and the application functions differently, which may be what the user desires. In this case uncheck this option.

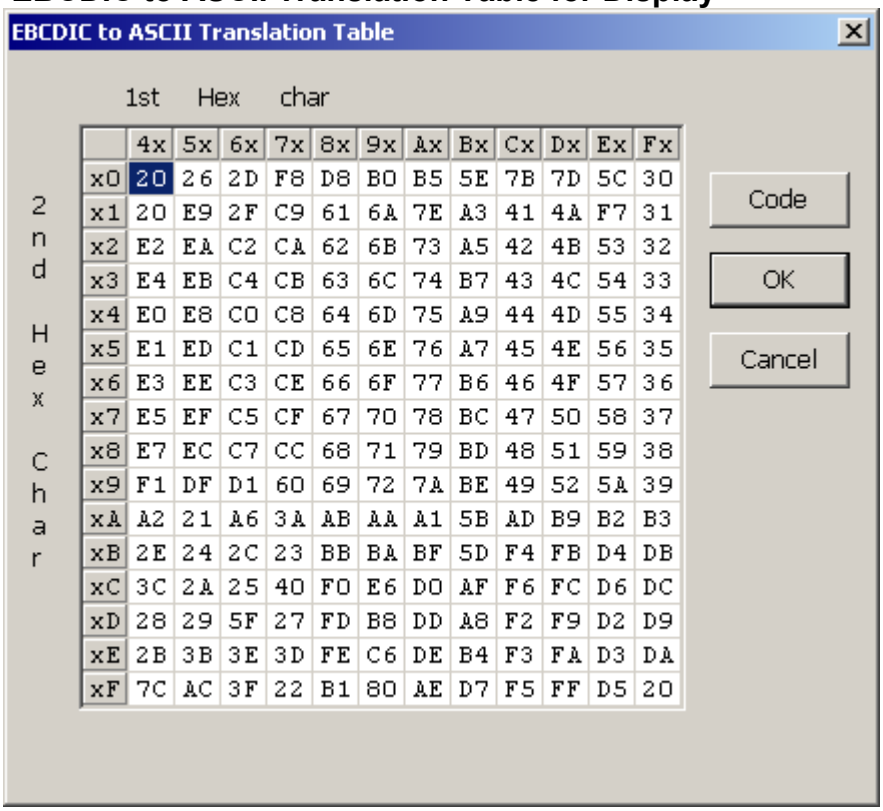
The following two check boxes are also displayed for a TN3270 display session.

Associated printer:
Check this box if a TN3270 associated printer is to be defined.

Number Lock in Numeric Fields:
Check this box if TN3270 numeric fields can accept alpha data.

Advanced:
Click to show the Display or Printer EBCDIC to ASCII Translation Table. The edit procedure is to overwrite new code over old code in the Table.

EBCDIC to ASCII Translation Table for Display

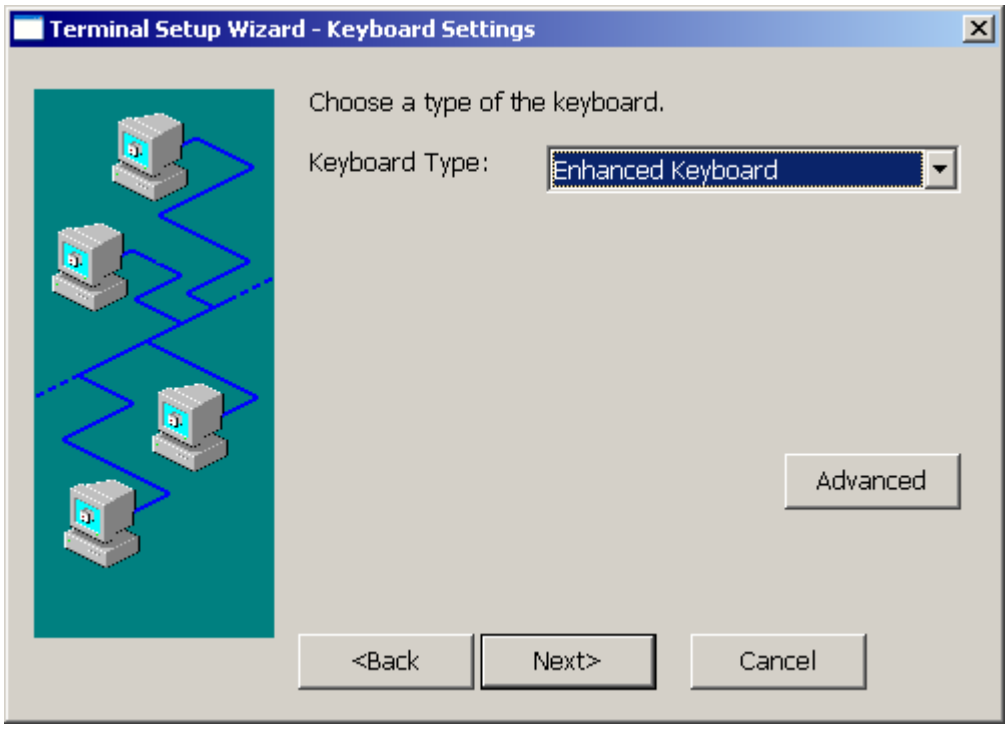


	4x	5x	6x	7x	8x	9x	Ax	Bx	Cx	Dx	Ex	Fx
x0	20	26	2D	F8	D8	B0	B5	5E	7B	7D	5C	30
x1	20	E9	2F	C9	61	6A	7E	A3	41	4A	F7	31
x2	E2	EA	C2	CA	62	6B	73	A5	42	4B	53	32
x3	E4	EB	C4	CB	63	6C	74	B7	43	4C	54	33
x4	E0	E8	C0	C8	64	6D	75	A9	44	4D	55	34
x5	E1	ED	C1	CD	65	6E	76	A7	45	4E	56	35
x6	E3	EE	C3	CE	66	6F	77	B6	46	4F	57	36
x7	E5	EF	C5	CF	67	70	78	BC	47	50	58	37
x8	E7	EC	C7	CC	68	71	79	BD	48	51	59	38
x9	F1	DF	D1	60	69	72	7A	BE	49	52	5A	39
xA	A2	21	A6	3A	AB	AA	A1	5B	AD	B9	B2	B3
xB	2E	24	2C	23	BB	BA	BF	5D	F4	FB	D4	DB
xC	3C	2A	25	40	F0	E6	D0	AF	F6	FC	D6	DC
xD	28	29	5F	27	FD	B8	DD	A8	F2	F9	D2	D9
xE	2B	3B	3E	3D	FE	C6	DE	B4	F3	FA	D3	DA
xF	7C	AC	3F	22	B1	80	AE	D7	F5	FF	D5	20

This table controls the EBCDIC to ASCII conversion shown on the display session. You normally do not need to modify this table. To modify the table, click on the ASCII value you want to change. You overwrite the default value by typing the new value. Click the **CODE** button to display the character symbols instead of Hex values. The button name changes to **Symbol**. Click Symbol to display the hex code values.
To exit this screen, click on **OK**.

4.1.1 - Display Session Screens

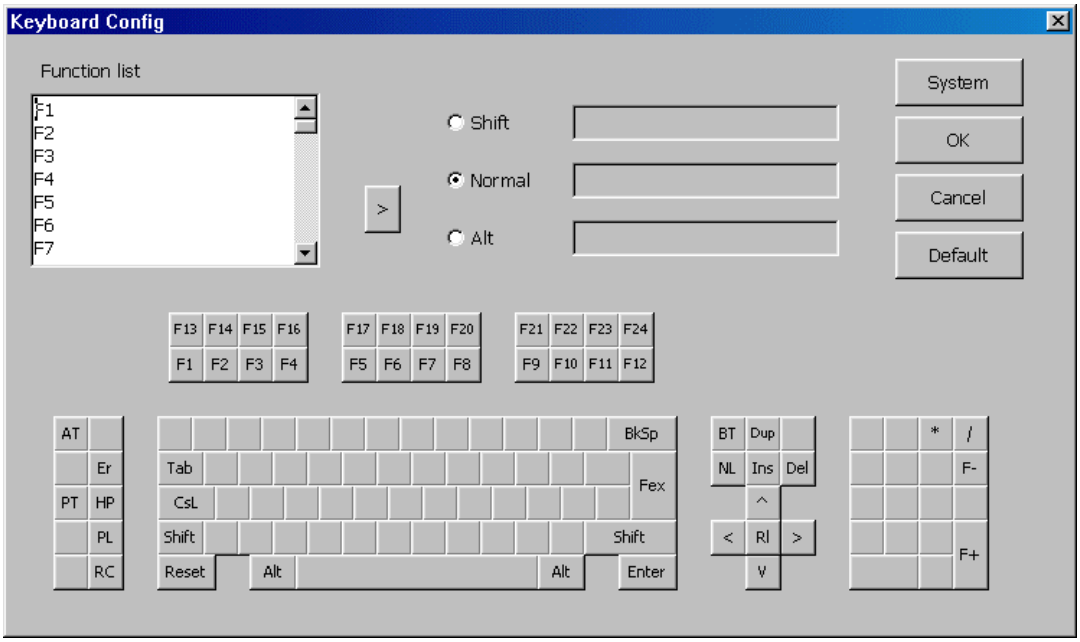
4.1.1.1 - Keyboard Type Dialog Box



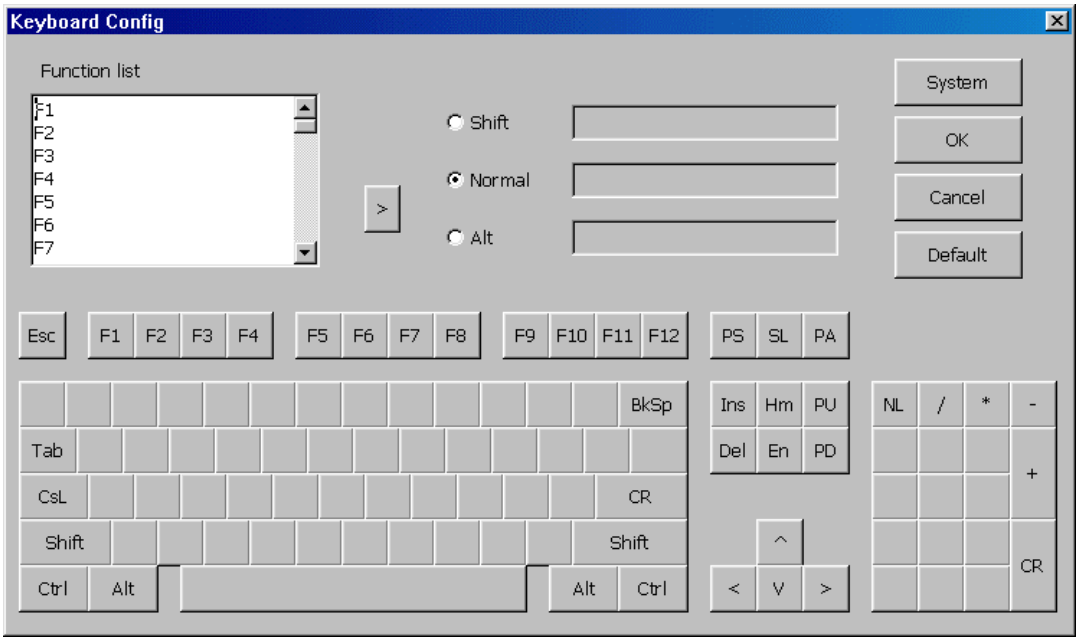
Select the Keyboard Type: Enhanced (PC style keyboard) or 122Key.

Click **Advanced** to map the keyboards as shown below. On these maps, click the key to be mapped and select/enter the desired definition. Note that these maps can also be invoked from an Emulation display screen (File-Keyboard Remapping).

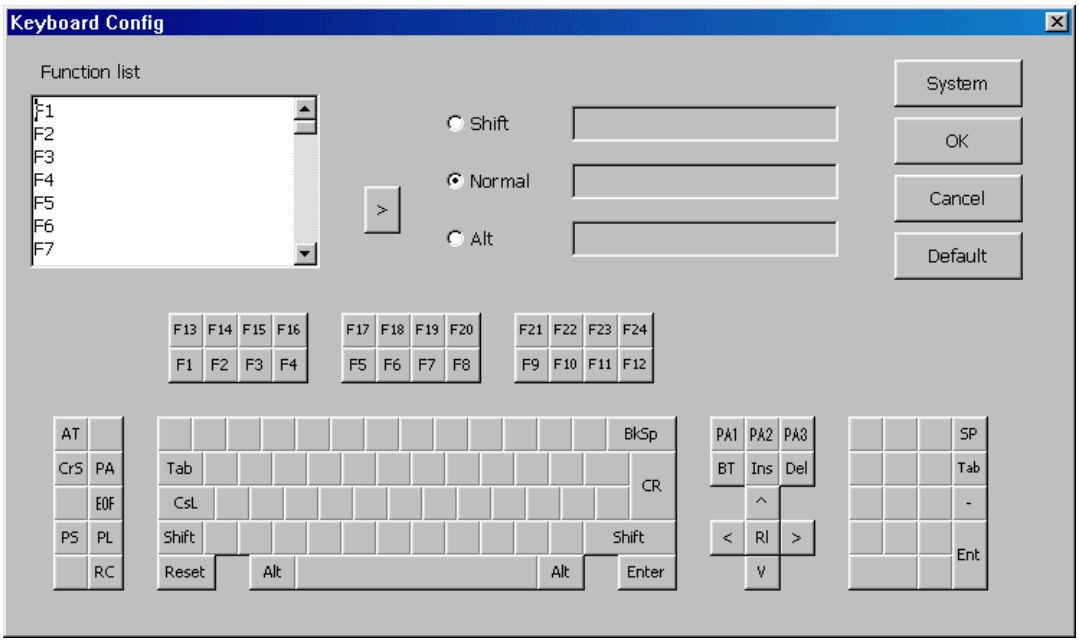
4.1.1.2 - 122-Keys Keyboard Mapping for TN5250



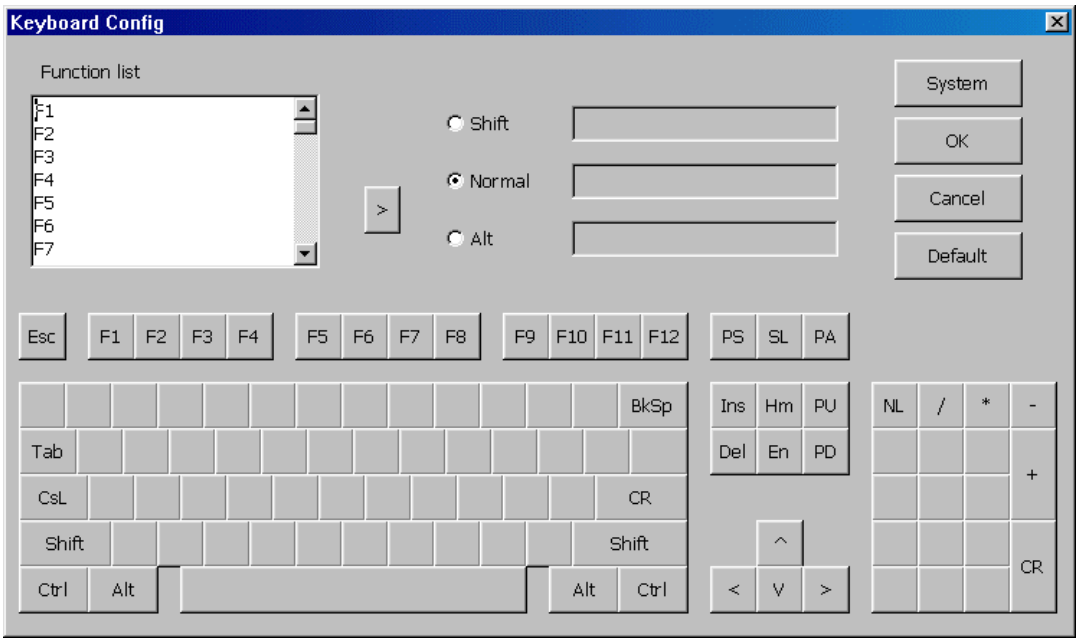
4.1.1.3 - Enhanced Keyboard Mapping for TN5250



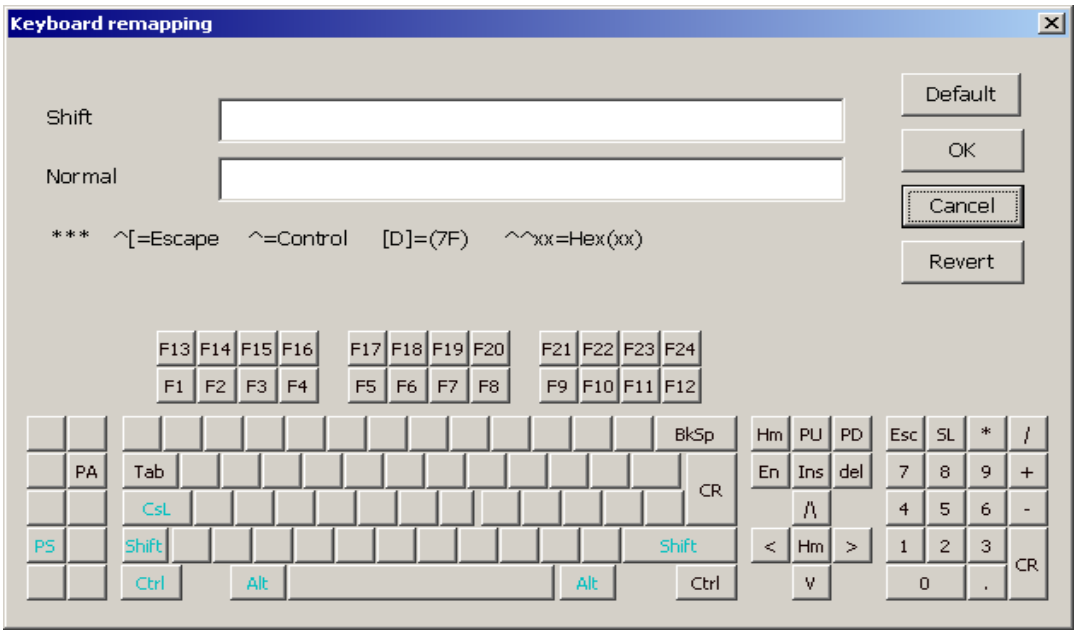
4.1.1.4 - 122-Keys Keyboard Mapping for TN3270



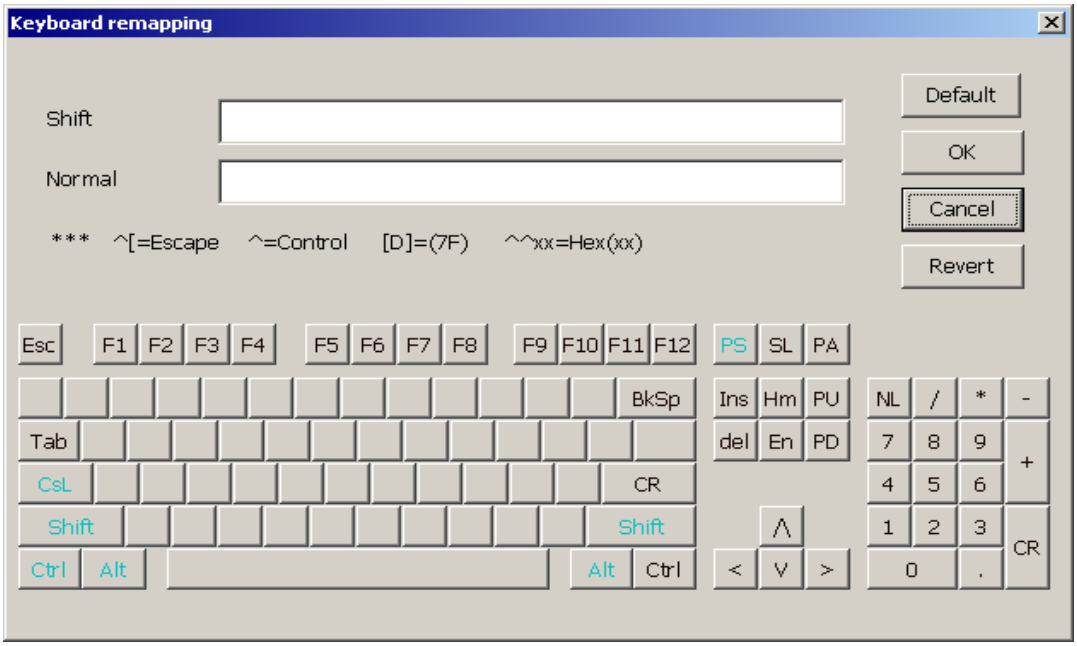
4.1.1.5 - Enhanced Keyboard Mapping forTN3270



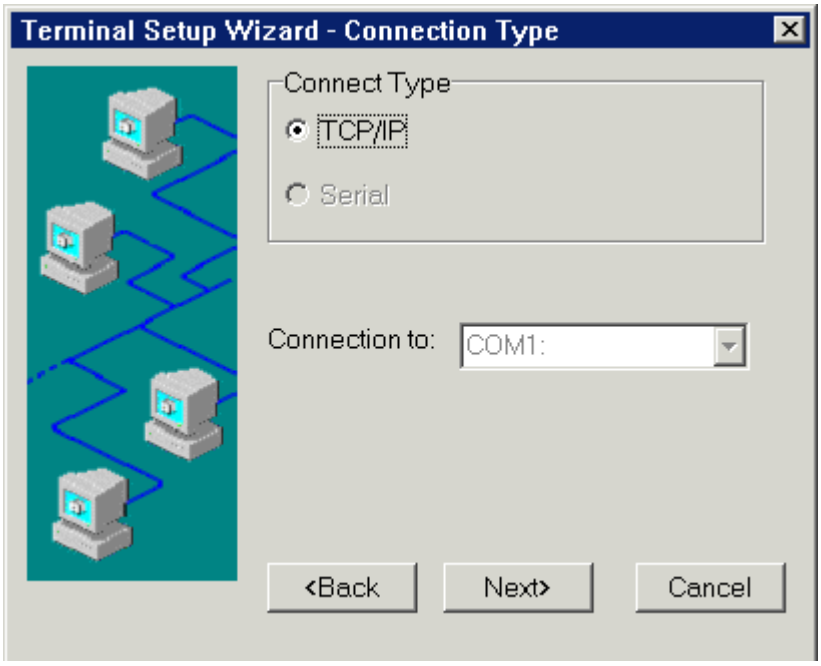
4.1.1.6 - 122-Keys Keyboard Mapping for ASCII



4.1.1.7 - Enhanced Keyboard Mapping for ASCII



4.1.1.8 - Connection Type Dialog Box (ASCII session)



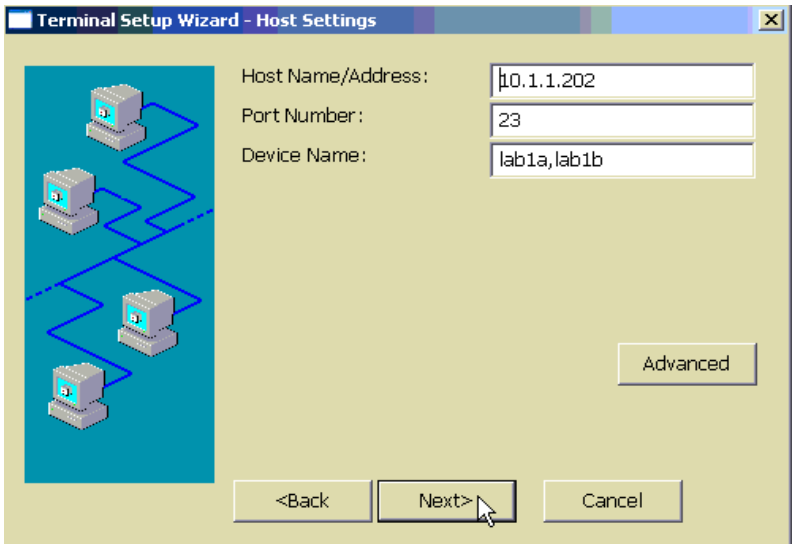
TCP/IP:

Click this button and ***Next*** to use Host Settings dialog box.

Serial:

Reserved for future enhancement.

4.1.1.9 - Host Settings Dialog Box (Display Sessions)



Host Name/Address:

Enter the fully qualified Domain name or static IP address.

Port Number:

Enter TCP/IP port for Telnet on your host. The default value is port **23**.

Device Name:

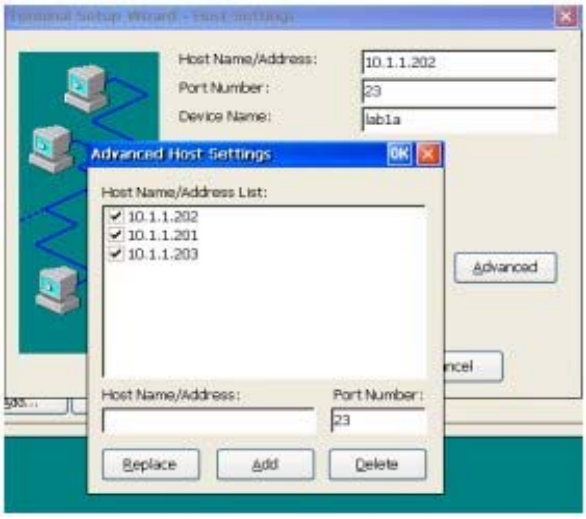
The host device name. A blank entry will cause the host to create a virtual device name. This name must be unique.

Multiple names may be entered using comma separators. During connection, if a name is already in use, connection is attempted using the next name in sequence. Up to five names may be specified.

Local Echo (ASCII session only):

Check to enable Local keystroke Echo.

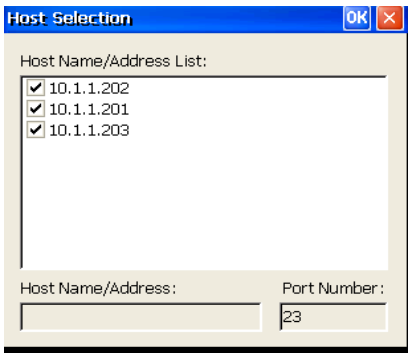
Advanced:
Using the Advanced button may specify connections to multiple Hosts.
An example screen showing multiple hosts is shown below.



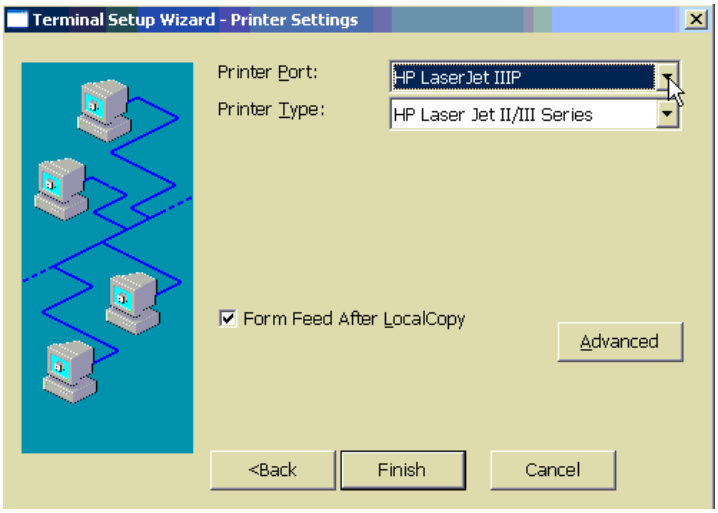
Initially this screen displays the Host Name/Address entered from the main Host Settings screen with a check in the check box indicating execution is desired.
The Name/Address of other hosts can be **Add**ed. Existing entries can be **Delete**d or **Replace**d. Uncheck entries that are not to be started when the session is started.

Duplicate Host Name/Address entries are ignored – hosts must be unique.
All host sessions inherit Device Name plus any Setting Options set after the session is started (e.g. Connection Retry, Color Mapping, etc.).

If more than one host is specified, the user is presented with a screen when the session starts. At this time entries may be unchecked so as not to run or checked to be started when OK is clicked.



4.1.1.10 - Printer Settings Dialog Box

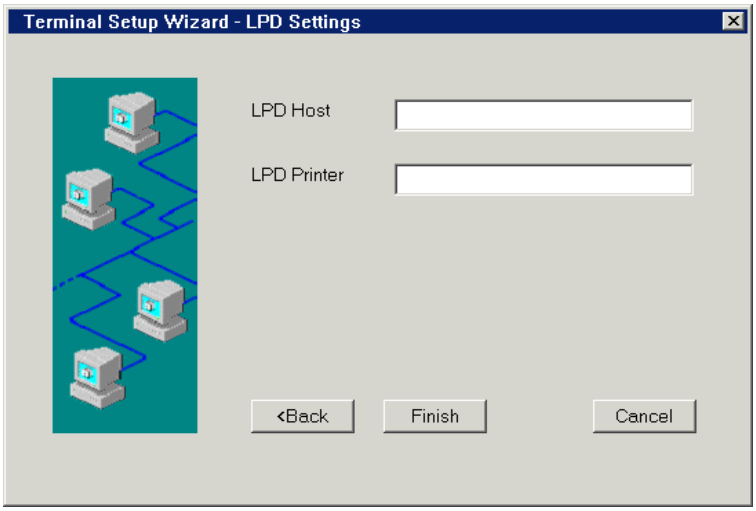


If a printer is attached or a network printer is available, it can be used to print the current display screen: Press PRINT (Print Scrn) for TN3270 or ASCII sessions; or Shift+PRINT for TN5250 sessions.

Printer Port:
Drop Down list shows all printers configured under XP plus a **LPR** network printer selection. If **LPR** is selected, the **Finish** button changes to **Next** to bring up a LPR definition screen.

Printer Type:
If **LPR** was selected, select the closest Printer Type from the drop down list.

4.1.1.11 - LPD Settings Dialog Box



To enable this feature, enter LPD (Line Printer Daemon) Host IP address and queue name of the LPD printer in required fields.

LPD Host

This field is for the IP address of an existing printer server.

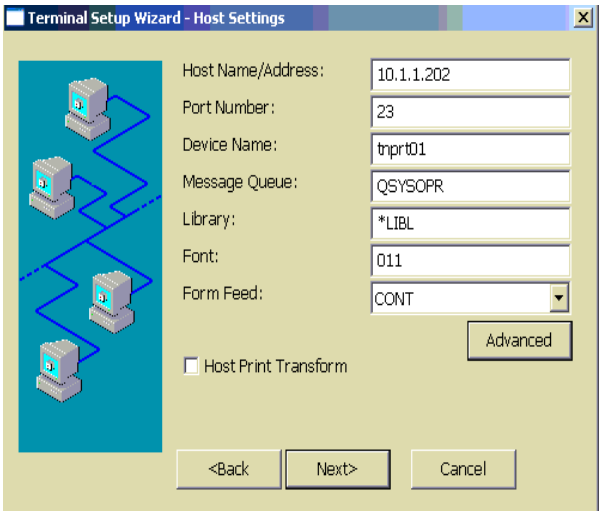
LPD Printer

This field is for the queue name of the LPD. The name is case sensitive.

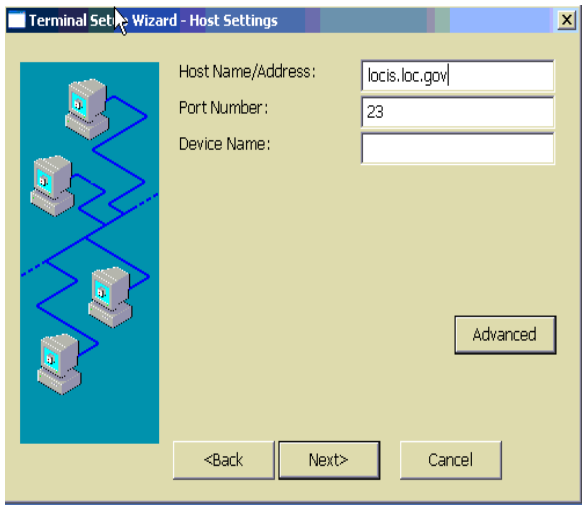
Note: If either of “LPD Host” and “LPD Printer” field is null, the WBT will cause screen copy to its attached printer (if any).

4.1.2 - Printer Session Screens

Host Settings (TN5250 Printer)



Host Settings (TN3270 Printer)



Host Name/Address:
Enter the fully qualified Domain name or static IP address.

Port Number:
Enter TCP/IP port for Telnet on your host. The default value is port **23**.

Device Name:
The host device name. A blank entry will cause the host to create a virtual device name. This name must be unique.

Multiple names may be entered using comma separators. During connection, if a name is already in use, connection is attempted using the next name in sequence. Up to five names may be specified.

Message Queue:
The default is **QSYSOPR**.

Library:
The default value for this required field is ***LIBL**.

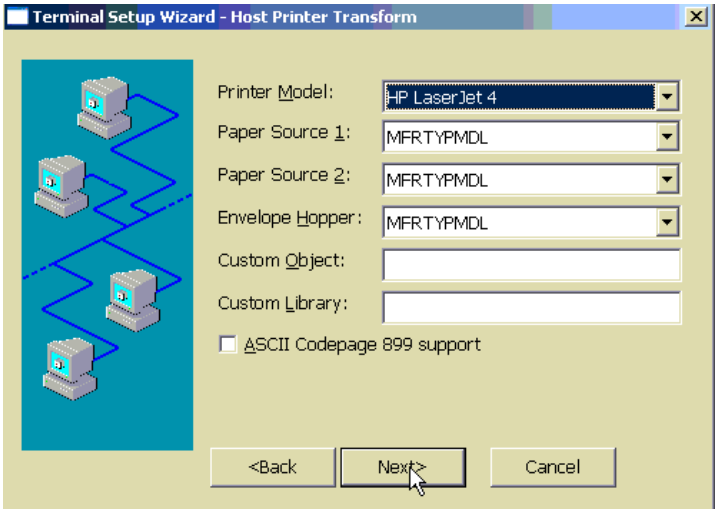
Font:
The default value is **011**.

Form Feed:
The default value is **CONT**.

Host Print Transform:
Click this check box to use the Host Print Transform dialog box (See below). This function is activated only when TN5250 Printer mode is selected.

Advanced:
Connections to multiple Hosts may be specified by using the **Advanced** button. Refer to page 4-11 for a detailed description.

4.1.2.1 - Host Print Transform Dialog Box (TN5250)



Printer Model:
Select your printer model. For a Customized printer object, select **Other Printer** and specify **Custom Object** name and **Custom Library** below.

Paper Source 1:
Select paper type in paper source 1. The default setting is **MFRTYPMDL**.

Paper Source 2:
Select paper type in paper source 2. The default setting is **MFRTYPMDL**.

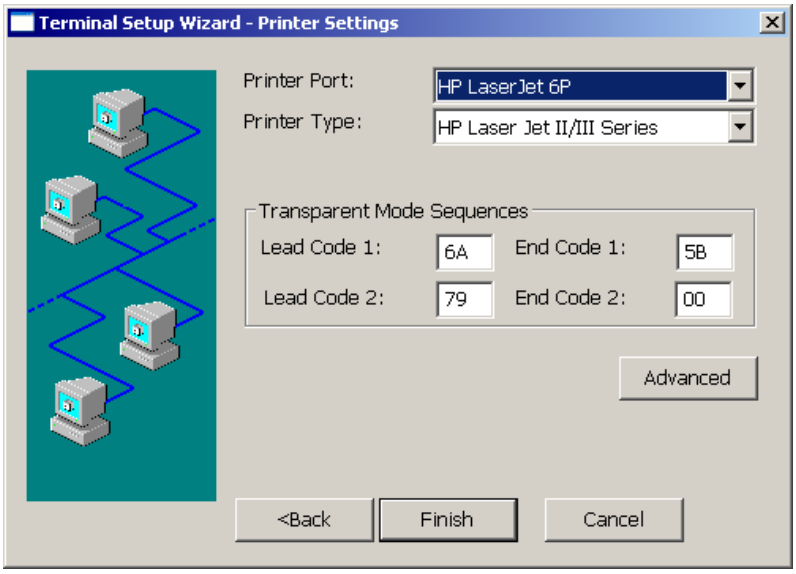
Envelope Hopper:
Select Envelope size. The default setting is **MFRTYPMDL**.

ASCII Codepage 899 support:
Click to enable this function (not recommended).

Custom Object:
The default setting is blank.

Custom Library:
The default setting is blank.

4.1.2.2 - Printer Settings Dialog Box (TN5250 & TN3270)



Printer Port:

List of printers installed in XPe. Select desired printer.

Printer Type:

Select the desired printer from the scroll list.

Transparent Mode Sequences:

Enter the specific value or the default will be used as followed.

Lead Code1:	**6A**	End Code1:	**5B**
Lead Code2:	**79**	End Code2:	**00**

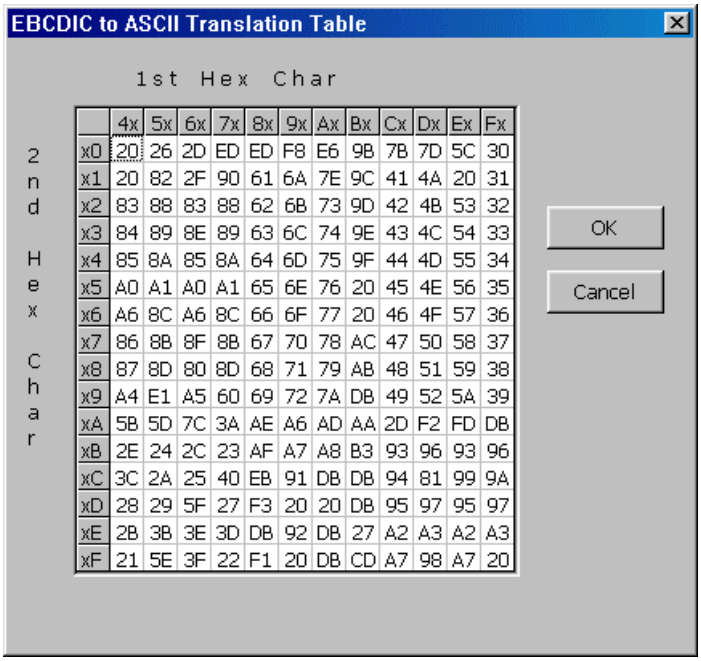
If the values of lead and end codes are '00', this feature will be disabled.

Below is an example illustrating the transparent mode feature; '|¬' are the lead codes and '$' is the end code:
Given the character string
|¬1B410C$ (Hex 6A 5F F1H C2H F4H F1H F0H C3H 5BH)
The printer emulation program will automatically remove the
Lead codes |¬ and End code $
And pack every two bytes of the remaining characters into one byte
Remaining characters 1B410C (Hex F1 C2 F4 F1 F0 C3)
Packed Hex 1B 41 0C
And then send those bytes (Hex 1B 41 0C) to the printer.

Advanced:

Click Advanced to display/Edit the printer EDCDIC-ASCII table.

EBCDIC to ASCII Translation Table for Printer



	4x	5x	6x	7x	8x	9x	Ax	Bx	Cx	Dx	Ex	Fx
x0	20	26	2D	ED	ED	F8	E6	9B	7B	7D	5C	30
x1	20	82	2F	90	61	6A	7E	9C	41	4A	20	31
x2	83	88	83	88	62	6B	73	9D	42	4B	53	32
x3	84	89	8E	89	63	6C	74	9E	43	4C	54	33
x4	85	8A	85	8A	64	6D	75	9F	44	4D	55	34
x5	A0	A1	A0	A1	65	6E	76	20	45	4E	56	35
x6	A6	8C	A6	8C	66	6F	77	20	46	4F	57	36
x7	86	8B	8F	8B	67	70	78	AC	47	50	58	37
x8	87	8D	80	8D	68	71	79	AB	48	51	59	38
x9	A4	E1	A5	60	69	72	7A	DB	49	52	5A	39
xA	5B	5D	7C	3A	AE	A6	AD	AA	2D	F2	FD	DB
xB	2E	24	2C	23	AF	A7	A8	B3	93	96	93	96
xC	3C	2A	25	40	EB	91	DB	DB	94	81	99	9A
xD	28	29	5F	27	F3	20	20	DB	95	97	95	97
xE	2B	3B	3E	3D	DB	92	DB	27	A2	A3	A2	A3
xF	21	5E	3F	22	F1	20	DB	CD	A7	98	A7	20

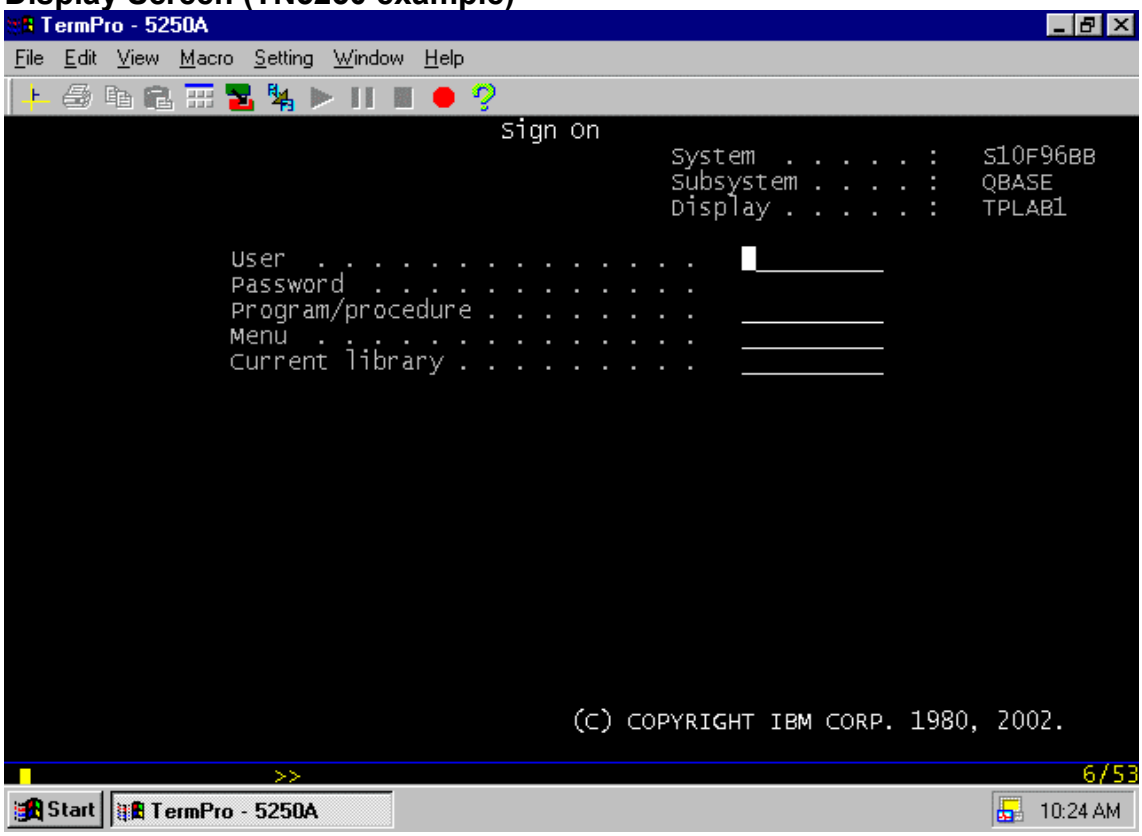
This table controls the EBCDIC to ASCII conversion for your printer session. You normally do not need to modify this table. If a character is printing on your printer with the wrong ASCII value, use the printer manual to determine the ASCII HEX value of this character and that of the value you want in its place. Find the incorrect value in the table, click on the value and type in the correct value. To exit this screen, click **OK**.

4.2 - Using Emulation Sessions

This section describes the Display and Printer session screens and user entry options.

4.2.1 - Display Sessions

Display Screen (TN5250 example)


TermPro - 5250A
File Edit View Macro Setting Window Help
Sign On
System . . . . . : S10F96BB
Subsystem . . . . : QBASE
Display . . . . . : TPLAB1
User . . . . . .
Password . . . . . .
Program/procedure . . . . . .
Menu . . . . . .
Current library . . . . . .
(C) COPYRIGHT IBM CORP. 1980, 2002.
>>
6/53
Start
TermPro - 5250A
10:24 AM

Control bar:
The bar at the top of each display session consists of two sections:

- **Menu bar** has six options: File, Edit, View, Macro, Setting and Help.

  The menu options are described in the following sections.

- **Tool bar** has Icons for (left to right): Ruler, Print, Copy, Paste, Keypad, Color Map, Keyboard Map, Macro Play/Pause/Stop/Record, and Help.

- **X box** - Click to Exit (End Connection).

	Ruler	Click to toggle ruler On/Off. See Setting Menu for choice of ruler types.
	Associated Printer	When an Associated Printer is selected with TN3270 session setup, this icon will be active. Click it to switch to the associated printer control windows.
	Copy	Copy selected area. See Edit Menu for use.
	Paste	Paste copied area. See Edit Menu for use.
	Key Pad	Display Key Pad. See File Menu for use and Setting Menu for Key Pad configuration.
	Color Remapping	Change colors. See Setting Menu for use.
	Keyboard Remapping	See keyboard maps shown following Keyboard Type Dialog Box.
	Play	Play Macro - See Macro Menu for use.
	Pause	Pause Macro - See Macro Menu for use.
	Stop	Stop Macro recording - See Macro Menu for use.
	Record	Record Macro - See Macro Menu for use.
	Help	Display basic information about terminal.

Status bar:

There are two status bars displaying at the bottom of each display session.

- **First status bar:**
  The right area identifies the cursor position, row (R) and column (C) in the format R/C. The left area consists of status indicators and special indicators (not always displayed). Each of them shows information about your current session and status of the host system.

Status Indicators:

■	The host system is available.
X	Keyboard input is inhibited. For TN3270, see TN3270 Input Inhibit
^	The keyboard is in insert mode.
⇧	The SHIFT key is down.
■	A message is waiting on the host system for the session. (TN5250)

Special Indicators:

d̄	Diacritic Mode	The terminal is in diacritic mode. Hit the space bar to see the character.
>>	Type Ahead	You can continue to key even if the keyboard is input inhibited. (TN5250 only)
Num	Numeric	Numeric field (TN3270 only)

TN3270 Input Inhibit Status

X-system	System lock. The application program locked the keyboard.

X 🕐	Time(Terminal wait). The host needs more time to response to your request.
X 웃 NUM	Numeric data only
X-f	Minus function
X-s	Minus symbol
X 웃 >	Too much entered
X ←웃→	Go elsewhere
X웃+?	An invalid diacritical-mark key error
XPROG nnn	Program check. The symbol may appear because the data received is not correct. Please refer to 'IBM 3174 Establishment controller customer problem Determination' for the definition of nnn.

- **The second status line:**
  The left side shows Ready or Macros function status. The right side includes five status areas:
  1. The session type – TN5250 or TN3270
  2. Host Address
  3. Device name
  4. **A :** Caps Lock key is on
  5. **N :** Num Lock key is on

  The display of this line can be disabled via a View menu option.

Cursors and Cursor Functions:

There are generally two cursors - Emulation cursor (Caret) and the Windows mouse cursor. By default, the **right mouse button** can be used to click on various '**Hot Spots**' to select and execute menu number options, execute system function keys listed on the screen, or type a selected word at the Emulation cursor position.

Local Screen Print:

TN5250: Key ***Shift+Print*** to print to local attached printer.
TN3270/ASCII: Key ***Print*** to print to local attached printer.

Full Screen Mode:

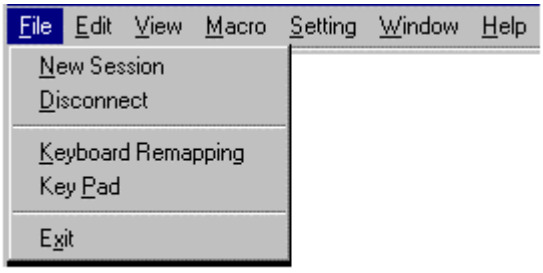
The session can be configured as ***Full Screen***. This mode may also be set from the View menu. In this mode, the Title Bar and Second Status line are not displayed and the mouse cursor is not displayed. The screen appears as if it was a 'green screen' dumb terminal with input only from the keyboard.

To exit Full Screen mode to the windows display mode, just Double Click the left mouse button.

Enhanced Keyboard TN5250 keying notes:

Ruler Toggle - Alt+Page Down
DUP key - Shift+Insert
Hex key - Alt+F7
Macro Record - Alt+F4
Macro Plat - Alt+F5
Test key - Alt+Shift Lock

4.2.1.1 - File Menu



New Session:
Click to display TermPro Session Control screen.

Keyboard Procedure: ALT+F+N

Disconnect / Connect:

Choose ***Disconnect*** to disconnect the session from the host. The connection remains active and ***Connect*** replaces ***Disconnect***.

Keyboard Procedure: ALT+F+D or Shift+Alt+Delete

Disconnect Confirm Dialog Box

Keyboard Remapping:
See prior section for the **Keyboard Remapping** screens.

Keyboard Procedure: ALT+F+K

Key Pad:

Key Pad Dialog Box

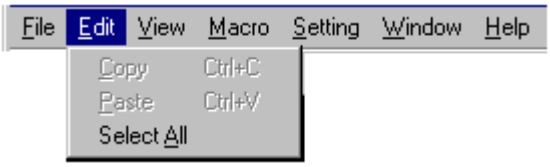
The **Key PAD** allows you to access frequently used keyboard functions or macros from a convenient pop-up KeyPAD. You can position and size the display. Click top left X to remove this display. To edit the KeyPad, see Settings Menu (Key Pad).

Keyboard Procedure: ALT+F+P

Exit:
Click **Exit** to end the connection.

Keyboard Procedure: ALT+F+X

4.2.1.2 - Edit Menu



Copy:
You can use this function to copy data from one session or screen into another.
First select the area to be copied.

To select the area to be copied using the mouse, press the left mouse button at a corner of the area to be copied and drag the mouse cursor to highlight the area.
To select the area to be copied using the keyboard use: ALT+SHIFT+(Arrow keys)

Keyboard procedure: ALT+E+C

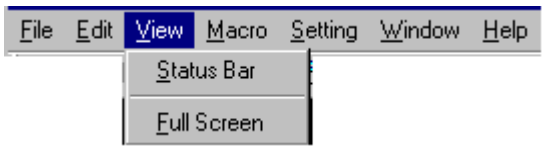
Paste:
This option can place the data that has been copied to the current cursor position.

Keyboard procedure: ALT+E+P

Select All:
This option is used to select all data so you can copy the entire screen. The second status bar will not be selected.

Keyboard procedure: ALT+E+A

4.2.1.3 - View Menu



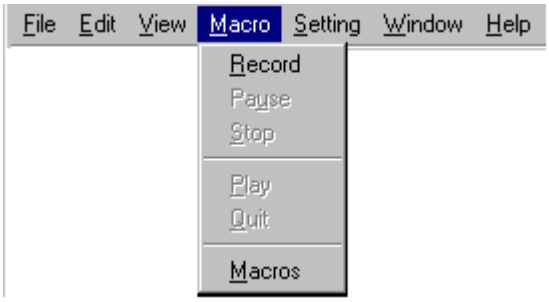
Status Bar:
Use this option to toggle (on/off) display of the status of the current session in the bottom line of the screen.

Keyboard procedure: ALT+V+S

Full Screen:
Use this option to toggle the Full Screen mode. To return to normal screen mode, use the key sequence below or double-click the left mouse button.

Keyboard procedure: ALT+V+F

4.2.1.4 - Macro Menu



Macros are used to record and play back frequently used keystrokes.
A macro can also be specified to automatically run after the connection is started.

Record:

To record a macro, place the cursor in the desired position on the screen, then click the **Record** button, start typing the characters, command keys, action keys, etc, when finished, click the **Stop** button.

Keyboard procedure: *ALT+M+R*

Pause:

Pause is used to allow user input during a playback sequence or to insert a second time delay. While recording a macro, select Pause to allow non-recorded user input. The name Pause changes to Continue. Select Continue to resume recording the macro.

Keyboard procedure: ALT+M+U or press the PAUSE key

To Continue, press: ALT+M+C or the PAUSE key

When Pause is active, you may specify a 1 to 9 second delay by typing *CTRL+ALT+[1-9 on number pad]*. Pause is then set inactive. This is useful primarily in TN3270 and ASCII emulation to allow for screen transition (unbind state). If keystrokes are lost during screen transition, then a delay must be used.

Stop:
Stop ends the Record sequence. After selecting Stop, you will be prompted to enter a file name or cancel the record process.

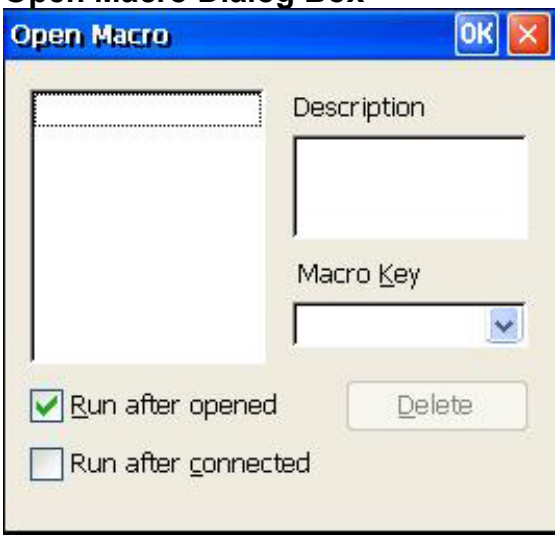
Keyboard procedure: *ALT+M+S*

Save Macro Dialog Box

Enter the file name you want the macro saved as. Type the description of the macro for future reference. Assign the macro to a function key - required if keyboard used to Play back the macro.

Macros:
Click ***Macros*** to display a list of all macros and their description. This option allows you to open a pre-recorded macro for use when you hit the **Play** button. Note that the default is to run the macro after you open the file so be sure that you are ready to play the macro you are selecting. If you are not ready, uncheck **"Run after opened"** so the macro is ready to be played, but will not play immediately.

Open Macro Dialog Box



To automatically run a macro after the connection is started, select a macro from the list and check "**Run after connected"**.

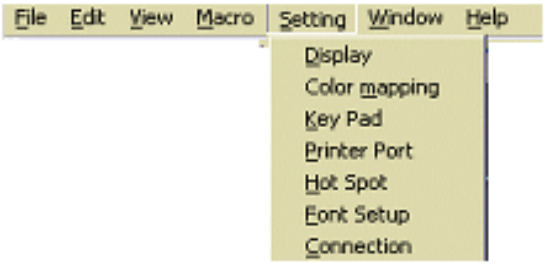
Play:
Play is only active after you have selected a macro from the Macro list. This option plays back the pre-recorded key sequences in the macro file previously selected.

Keyboard procedure: *ALT+M+P*

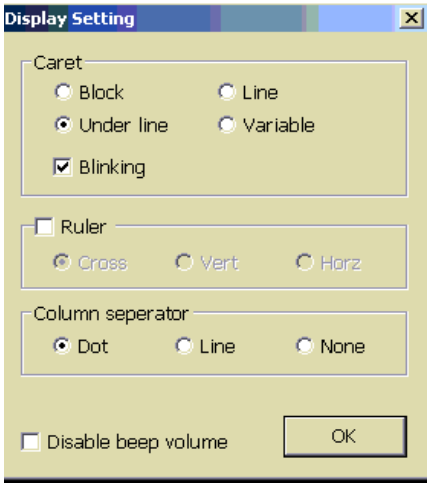
Quit:
This option is used to terminate a macro, which is playing. This option is only available if a macro is currently being played back.

Keyboard procedure: *ALT+M+Q*

4.2.1.5 - Setting Menu



Display: *(ALT+S+D)*



Display controls the cursor type and whether there is a ruler line on the caret.

Caret:

Caret (Cursor) type defaults to Block. The other two selections are Line and Under Line. Caret blinking can be enabled (default) or disabled.

Ruler:

If you select Ruler you can select one of three ruler lines: Cross, Vertical and Horizontal

Note: To toggle ruler on/off key Rule (122key keyboard) or ALT+PageDown (Enhanced keyboard).

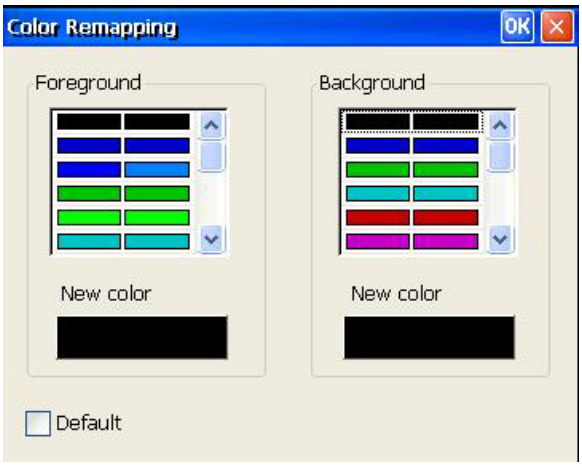
Column separator:

This option defaults to Dot; the other type is Line or None (no separator).

Disable Beep Volume:

Select (check) to disable Beep.

Color Mapping: *(ALT+S+M)*



Foreground:

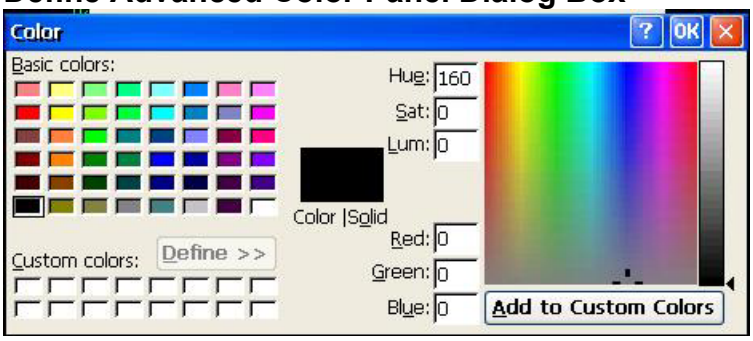
This box allows you to modify the foreground color.

1. Select the old color in the left color list.
2. Click **New color** button to select desired color in the Color Panel shown below.
3. If you need different color from the basic colors, click **Define** to create a new color using the Define Advanced Color Panel.
4. Click OK. The new color will display on the screen.

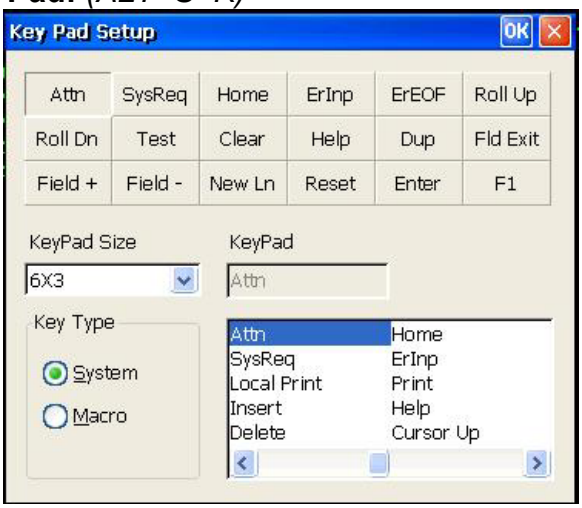
Background: Follow the Foreground procedure to modify the Background color.

Color Panel Dialog Box

Define Advanced Color Panel Dialog Box



Key Pad: *(ALT+S+K)*



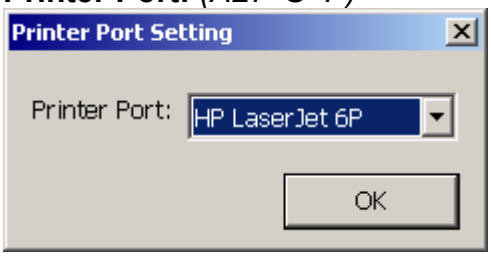
This option allows you to access frequently used keyboard functions or macros from a convenient pop-up Key Pad.

Select the **KeyPad Size** in terms of the number of Columns x Rows. Values range from 1x1 to 9x4.

Click on a cell in the matrix displayed. The Name, if any, will display in the **KeyPad** field.

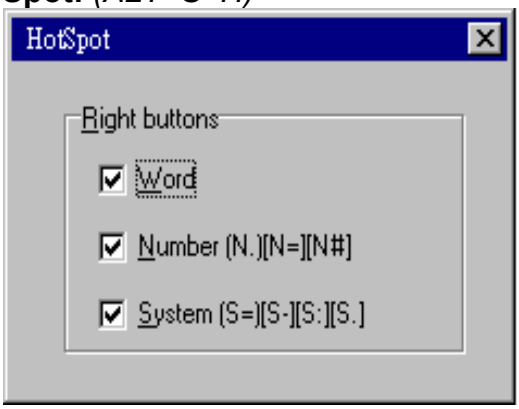
Select the **Key Type**; either **System** key or **Macro** name. The list of system keys or defined macro names will be displayed. Double click the desired entry for the specified cell.

Printer Port: *(ALT+S+P)*



The installed Windows printers are listed. Select the desired printer.

Hot Spot: *(ALT+S+H)*

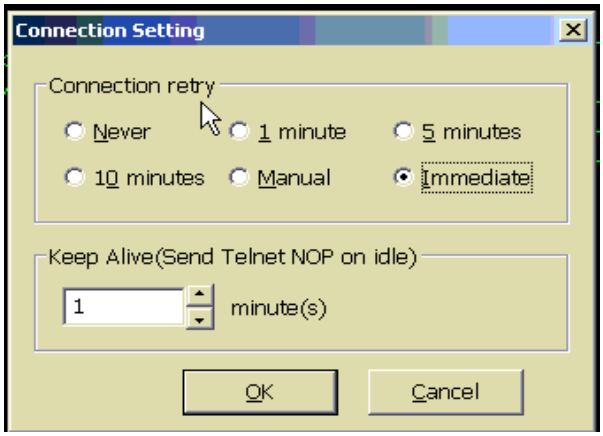


By default, the **right mouse button** can be used to click on various 'Hot Spots' to select and execute menu number options, execute system function keys listed on the screen, or type a selected word at the Emulation cursor position.

Font Setup: *(ALT+S+F)*

Select desired font. Courier New is the default. Other fonts may be loaded. The **Administrator** can install fonts into XPe as is done on a Windows XP-Pro PC. TermPro only supports monospace TrueType fonts.

Connection *(Alt+S+C)*



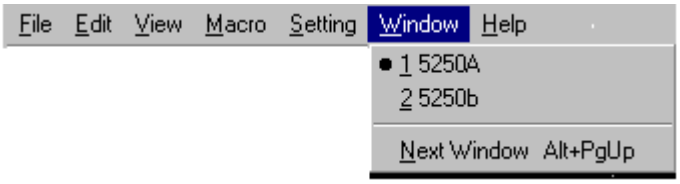
Connect retry:

When an emulation session is disconnected by the Host, an attempt can be made to automatically reconnect that session after a specified period of time. The default setting is **Never** to disable this feature. Retry time periods of **1**, **5**, **10**, or **30** minutes can be set. If **Immediate** is selected, an attempt is made to immediately reconnect this session.

Keep Alive:

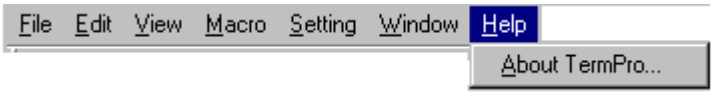
Set a non-zero value to cause the terminal to send a Keep Alive packet (Telnet NOP) to the Host every so many minutes. This may be necessary where 'Keep Alive' packets sent to the terminal are filtered out by the network and never received.

4.2.1.6 - Window Menu



Displays active sessions. Click on another session to display it.

4.2.1.7 - Help Menu

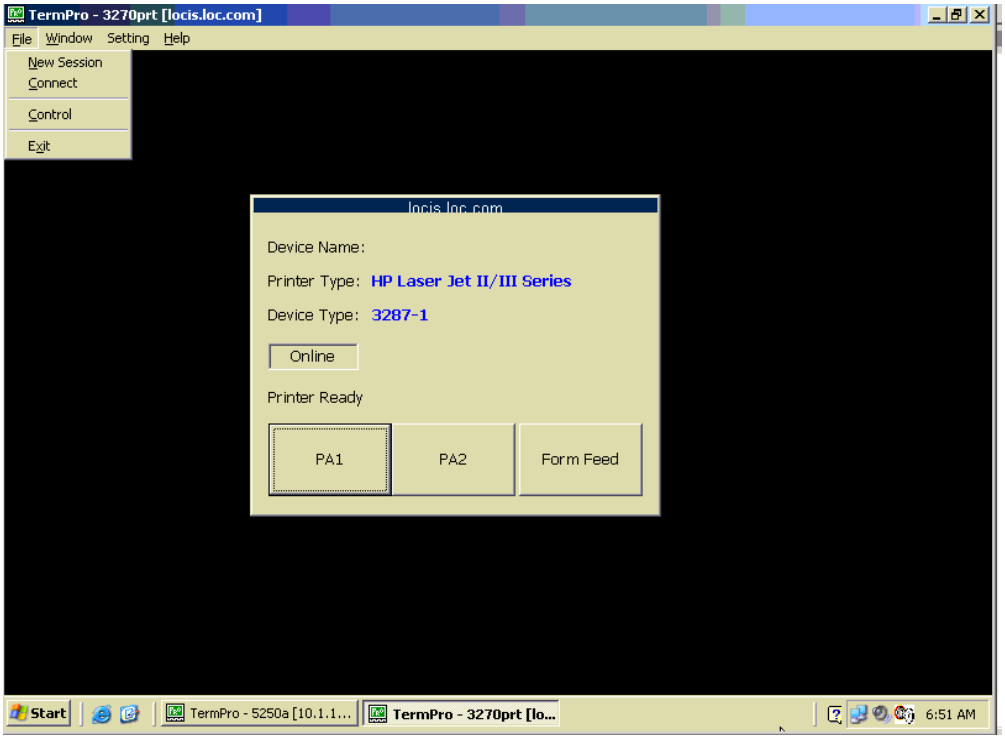


Click **Help** then **About** to display basic information about the terminal.

Keyboard Procedure: ALT+H+A

4.2.2 - Printer Session

Printer Session Screen (TN3270 Printer example)

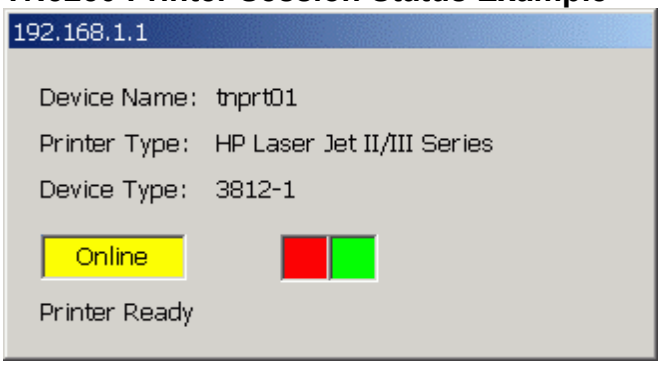


This dialog box means that the printer is in the ready status to connect to the host.

- **Online:**
  When the printer session is active, the 'Online' button will become yellow.

- **PA1/PA2/Form Feed: (TN3270 only)**
  Click the button to send the named code to the server.
  Using the keyboard, Tab to desired Button and press Enter.

TN5250 Printer Session Status Example



Online and printing (Red/Green boxes alternate).

4.2.2.1 - File Menu

New Session: (*ALT+F+N)*

Select New Session to display TermPro Session Control screen.

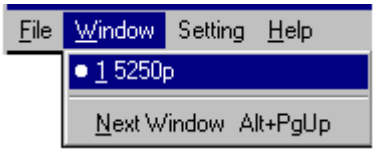
Disconnect: (*ALT+F+D)*

Select ***Disconnect*** to disable the printer session from the host. The connection remains active and ***Connect*** replaces ***Disconnect***.

Exit: (*ALT+F+X*)

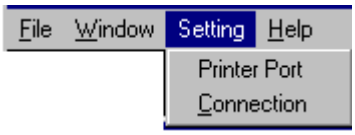
Exit (end) session.

4.2.2.2 - Window Menu

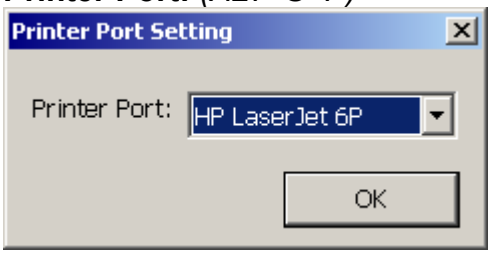


Displays active sessions. Click on another session to display it.

4.2.2.3 - Setting Menu

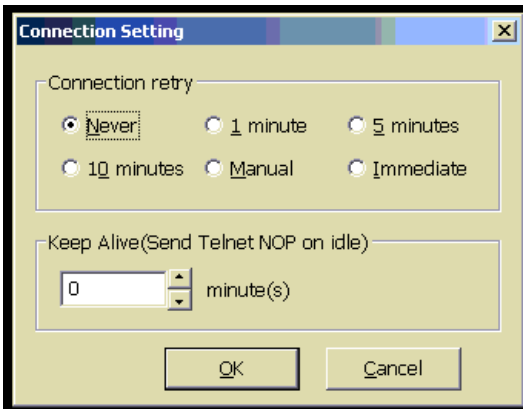


Printer Port: *(ALT+S+P)*

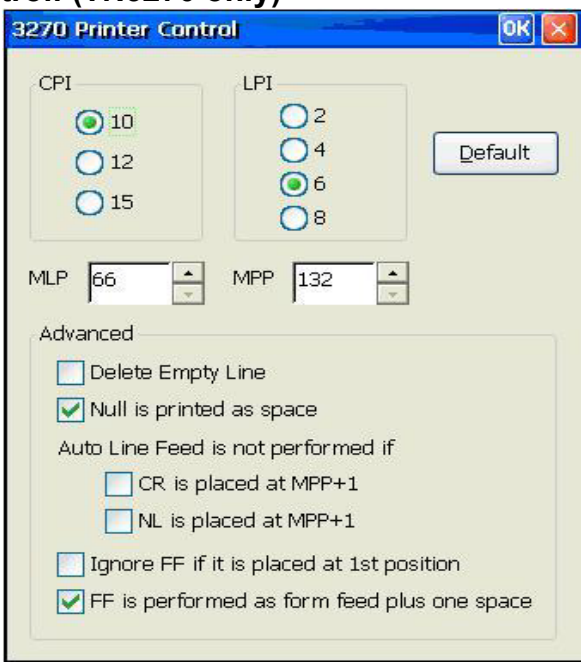


Select printer port: The installed Windows printers are listed.

Connection *(Alt+S+C)*



Control: (TN3270 only)



CPI:

Characters Per Inch. The default is 10 CPI.

LPI:

Lines Per Inch. The default is 6 LPI.

MPL:

Maximum Print Lines per page. The range is from 1 to 255. The default is 66.

MPP:

Maximum Print Position. The range is from 1 to 255. The default is 132.

Delete Empty Line:

Selecting this function will delete the whole line if it includes only unprintable characters. Unprintable characters include null, control codes. But space (X'40) is printable character. By default this function is disabled. This function is valid only for DSC (LU3 with 2 and 3 bit of WCC is not '00').

Null is printed as space:

This function is valid only for screen print DSC(LU3).

Auto Line Feed is not performed if

1. **CR is placed at MPP+1:**
   If this item is selected and MPP+1 has CR, the Auto Line Feed will not be performed. This function is valid only for DSC (LU3 with WCC's '00' in 2nd and 3rd bit).
2. **NL is placed at MPP+1:**
   Selecting this item will cause NL on MPP+1, the Auto Line Feed will not be performed. This function is valid only for DSC (LU3 with WCC's '00' in 2nd and 3rd bit).

Ignore FF if it is placed at 1st position:

Selecting this item in LU3, the system will ignore FF at 1st position in first line.

FF is performed as form feed plus one space:

When this item is selected, a FF code will cause form feed be performed. The 1st line of the next page will be a space and printing starts at the 2nd position of the 1st line. Clear this item and printing starts at the 1st position of the 1st line of the next page. This function is valid only for screen print and LU3. By default this function is enabled.

4.2.2.4 - Help Menu

Click **Help** then **About** to display basic information about the terminal.

Keyboard Procedure: ALT+H+A

Appendix A - XPe Image Recovery

This appendix describes how to recover a corrupted XPe image from the NLynx provided “Gold” image or your Backup image. Use this procedure if the XPe terminal will not boot; or to clear memory after a failed software install; etc.

The XP embedded operating system is built on top of a Linux Kernel which provided diagnostic and repair/update mechanisms. These features with FTP can be used to recover an image

Recovery Procedure:
Place the base XPe image on an FTP server. You must know the IP address of this server and the security requirements (ID and Password).

On the client to be recovered, enter the Linux kernel by holding down the Down Arrow key when you power on the client.

```
-----------------------------------------------------
      XP Embedded

      Update Only

-----------------------------------------------------
```

- Select the **Update Only** option and press ENTER.

```
-----------------------------------------------------
      Update Dialog
-----------------------------------------------------

      [ ] Update Procedure Menu

      [ ] Network Check & ping 10.1.1.241   ← default gateway

      [ ] Network Configuration

      [ ] Apply New Network

      [ ] Exit & REBOOT


            <Select>   <Cancel>
-----------------------------------------------------
```

- Select **Network Configuration** and press ENTER.

- Set Network parameters. Usually these settings are pre-filled and do not need to be changed, unless terminal has been moved to a different network.

```
      -------------------------------------------------
            Network Configuration
      -------------------------------------------------
            [ ] Save & EXIT
            [ ] Use Dhcp = yes
```

```
      [ ] IP Address =             <terminal IP>
      [ ] Network SubMask =
      [ ] Default Gateway =
      [ ] Name Server IP =
      [ ] Local HOST Name = xpemb
      [ ] Server Type For Update (HTTP/FTP) = ftp
      [ ] Server Name For Update = <FTP IP address>
      [ ] Path/File For Update =   <see Note>
      [ ] UpDate to Partition = /dev/hda
      [ ] Login User ID For Update = anonymous
      [ ] Login Password For Update = XXXXXXXXXXXX
      [ ] For Factory Use

     <Select>    <Cancel>
-------------------------------------------------
```

Note: Enter XPe image file name (14 characters or less including the .SMG file extension. This file must exist in your FTP root path.

Save & EXIT the Network Configuration screen. If you have changed the **IP Address**, do **Apply New Network** before continuing.

- Select the **Update Procedure Menu** option, press ENTER.

```
-------------------------------------------------
                Update Procedure
-------------------------------------------------
         [ ] Start UpDate Now

         [ ] Satart Update Test

-------------------------------------------------
```

- Select **Start UpDate Now.** You should see a progress bar for copying files. Do not power off the terminal, or interrupt this process!

- Press ENTER when the update is complete then reboot the terminal.

The terminal is ready for use when it boots as normal.

Note: Other procedures/mechanisms can be used to restore an image. Contact NLynx Technical Support for details should the above procedure fail.